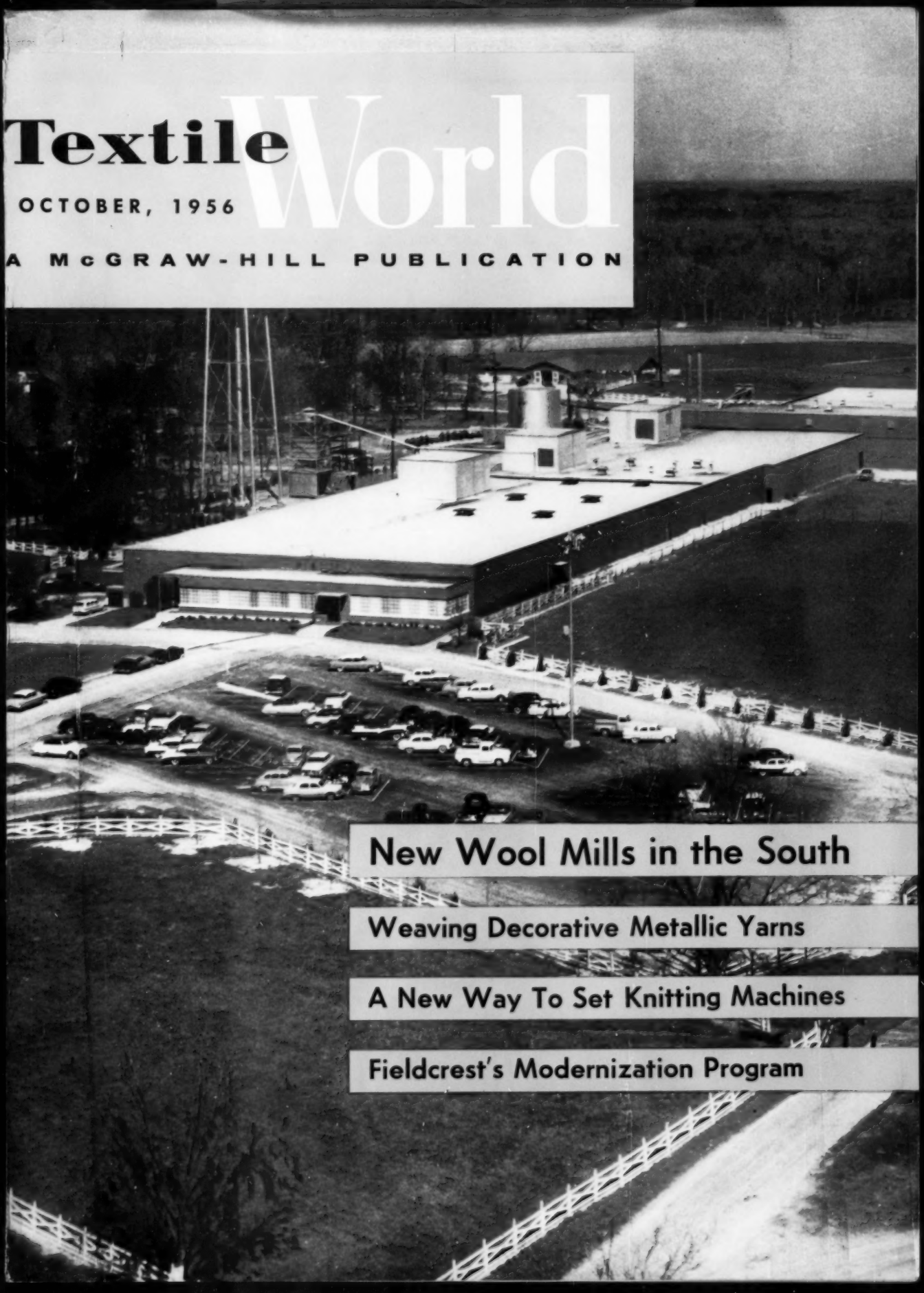
Textile World

OCTOBER, 1956

A McGRAW-HILL PUBLICATION



New Wool Mills in the South

Weaving Decorative Metallic Yarns

A New Way To Set Knitting Machines

Fieldcrest's Modernization Program

Textile Engineering

MODERNIZATION & EXPANSION

Modern machinery and production layouts, prepared and executed by Robert and Company Associates, have enabled scores of our clients to step-up production, cut costs and improve quality.

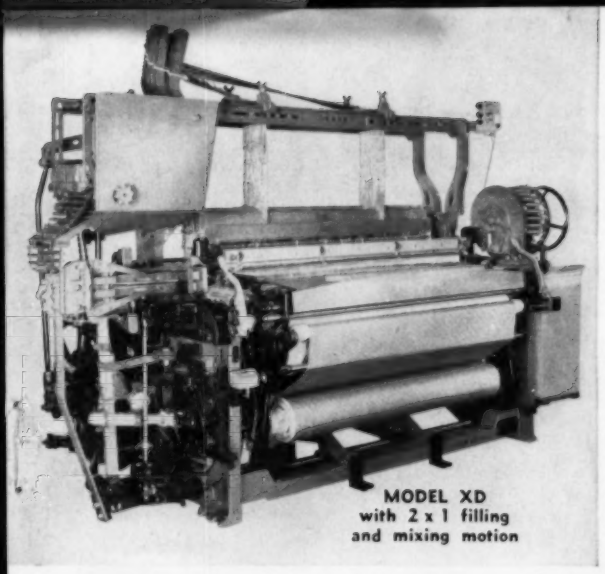
For one client, eight major modernization projects have been put into operation at one mill without loss of one day production. A large and complete staff with long experience in all phases of textile engineering enables us to start promptly and finish on schedule within the budget.

A survey of your existing mill operations and future requirements may show you how you can expand and modernize your production without interruption of output.

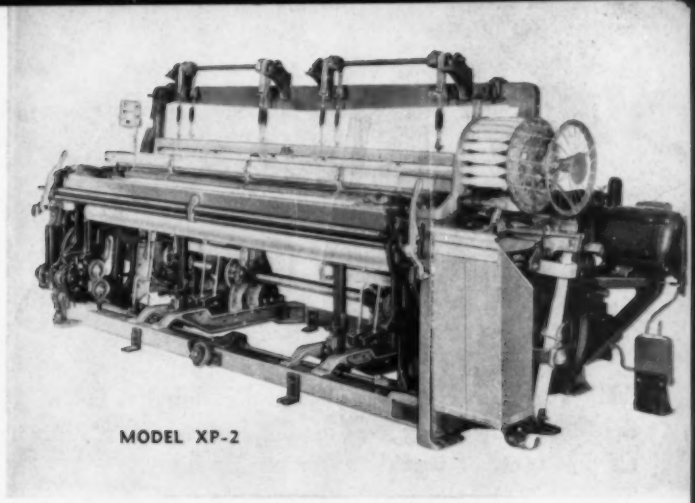
ROBERT AND COMPANY ASSOCIATES

Textile Engineering Division

ATLANTA



MODEL XD
with 2 x 1 filling
and mixing motion

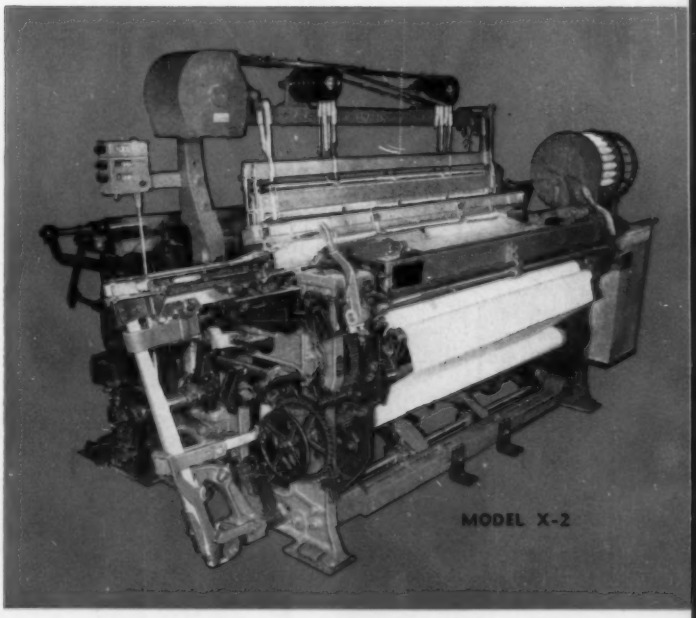


MODEL XP-2

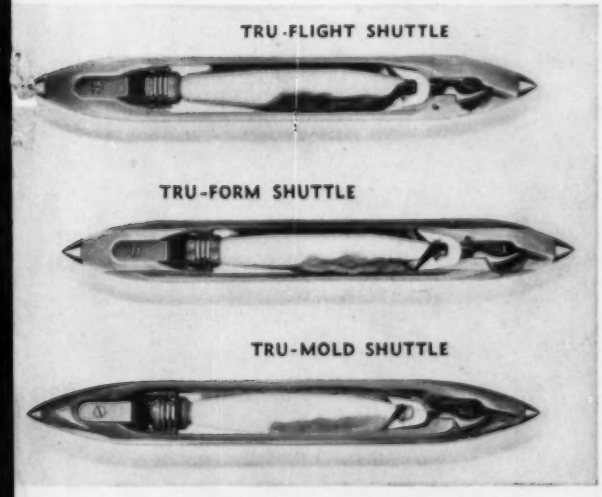
DRAPER LOOMS ARE THE WORLD'S FINEST SINGLE SHUTTLE LOOMS

Draper High-Speed Automatic Looms, featuring many new developments, are today's accepted standard for production, economy and versatility in weaving. Available in several models and widths, Draper looms are currently in use in textile mills throughout the world.

Draper looms, accessories and repair parts reduce weaving costs.



MODEL X-2

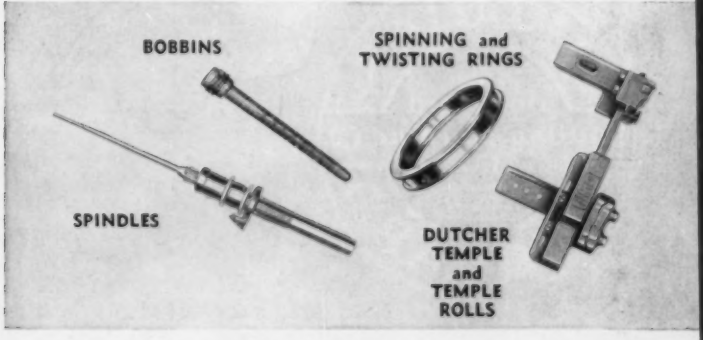


TRU-FLIGHT SHUTTLE

TRU-FORM SHUTTLE

TRU-MOLD SHUTTLE

DRAPER PARTS AND ACCESSORIES FOR BEST PERFORMANCE



BOBBINS

SPINNING and TWISTING RINGS

SPINDLES

DUTCHER TEMPLE and TEMPLE ROLLS

DRAPER CORPORATION / HOPEDALE, MASS.

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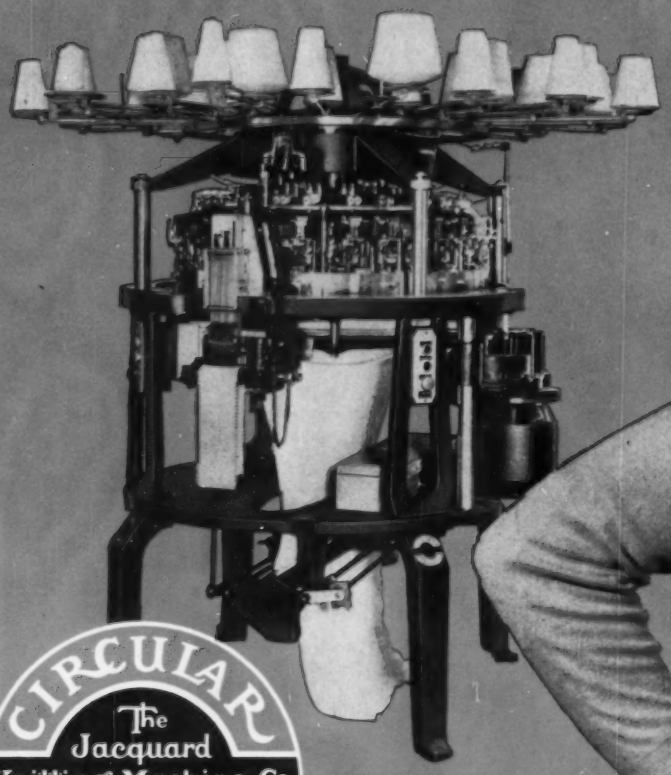
NEW . . . 32" Diameter, 24 Feed, Fully Automatic

CIRCULAR JACQUARD TAI-24

Ability to meet changing fashion demands has made the Jacquard Knitting Machine Co., Inc. the world's foremost manufacturer of Circular Knitting Machines.

The *new* TAI-24 is a 32" diameter, 24 feed, fully automatic, multi purpose Interlock, Plain Transfer and Rib Knitting machine . . . features a new two-speed vertical drive side, three roller take-up and dogless head construction.



CIRCULAR
The Jacquard Knitting Machine Co. Inc.
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JACQUARD

the world's largest manufacturers of circular jacquard knitting machines

JACQUARD KNITTING MACHINE CO., INC. Philadelphia 24, Pa.

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Volume 106 Number 10

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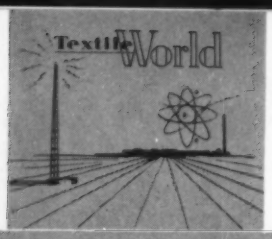

Developments To Watch

COLORED SHEETS . . . will be enhanced by stripes and borders of metallic yarn. In tests, the sheets have undergone rigorous wear and laundering; and the metallic yarn does not stretch, shrink, or lose its luster.

KNITTED CARPETS . . . are not far away. A knitting machine that can knit 180 courses per minute at over 80% efficiency is attracting great interest among carpet men. The machine, which produces fabric 100 ins. wide, makes the backing along with the pile. Wool yarn can be knitted with the same ease as cotton and rayon yarns, and jute yarn is knitted for the back. The tufts do not pull out; so the back does not have to be latex coated.

NYLON-FILLED FABRIC . . . will replace steel cables for reinforcing conveyor belts, reports B. F. Goodrich Industrial Products Co. A belt made with five plies of the new fabric, Nyfil 120-RS, is as strong as a steel-cord belt rated at 1,000 lbs. per in. per ply. It would take 20 plies of 42-oz. cotton fabric to provide the same strength.

LONG-STAPLE COTTON . . . will become scarcer in world markets as Egypt ships increasing amounts behind the Iron Curtain. On this assumption, the Supima Association of America is asking for increased acreage allotments for next year. About 50,000 bales are expected to be harvested this year.

ALUMINIZED FABRICS . . . that enable a man to work in temperatures one-eighth as hot as the sun's surface may be the answer to fire-fighting garment problems. Minnesota Mining & Mfg. Co.'s recent tests indicate that the lightweight fabrics can be used for coats for firemen, for long coats, aprons, spats, and gloves for steel workers, and for other hot jobs in specific industries.

TROPICAL-WEAR COTTONS . . . will be pushed by England in world markets. One fabric, known as Helikon, has the appearance of linen and is said to be wrinkle-proof in the hottest weather. The material can be washed without ironing.

METALLIC CARPET YARNS . . . may substantially increase sales of woven and tufted carpets. Five big carpet manufacturers who are using metallic yarns claim that sales are "way above average." The yarns, soft and pliable, are put in over-all floor coverings and scatter rugs.

DACRON FIRE HOSE . . . will make the fireman's work easier. Made in 100-ft. lengths instead of the traditional 50-ft. lengths, the hose is much lighter than conventional hose, absorbs 25% less water, and dries quickly. Abrasion tests show great resistance to wear from dragging. Manufacturer is Quaker Rubber Div., H. K. Porter Co., Inc.

FULL-FASHIONED HOSIERY . . . made of Terylene will be marketed in England. The fiber has the appearance of 30-den. nylon and produces long-wearing, snag-resisting hose.

HEAT-RESISTANT POLYETHYLENE . . . produced by Courtaulds Ltd. under the name of Courlene X-3, will withstand temperatures up to 120° C.; it melts at 135° C. The fiber is light, strong, and flexible at low temperatures. Present uses include protective clothing and rope. Spun-dyed fiber will be available shortly.

COTTON EXPORTS . . . from America could "double or triple over the next two or three years—or virtually disappear," says William Rhea Blake, executive vice president, National Cotton Council.

He bases the first part of this statement on the facts that (1) total overseas markets for cotton and synthetic fibers are two and one-half times greater than domestic markets and (2) the government export-price program is helping move cotton. He warns, however, that if United States cotton producers do not increase research and promotion, the overseas market may vanish entirely when the export-price program is discontinued.

BALE TIES . . . made of nylon may soon compete with steel ties. Chemstrand Corp. has developed nylon ties for cotton bales that are stronger than steel per weight. Strength of the ties has been proved in tests, but some slippage of ends must be corrected. Advantages claimed for the nylon ties are lightness, reusability, and resistance to rust and corrosion.

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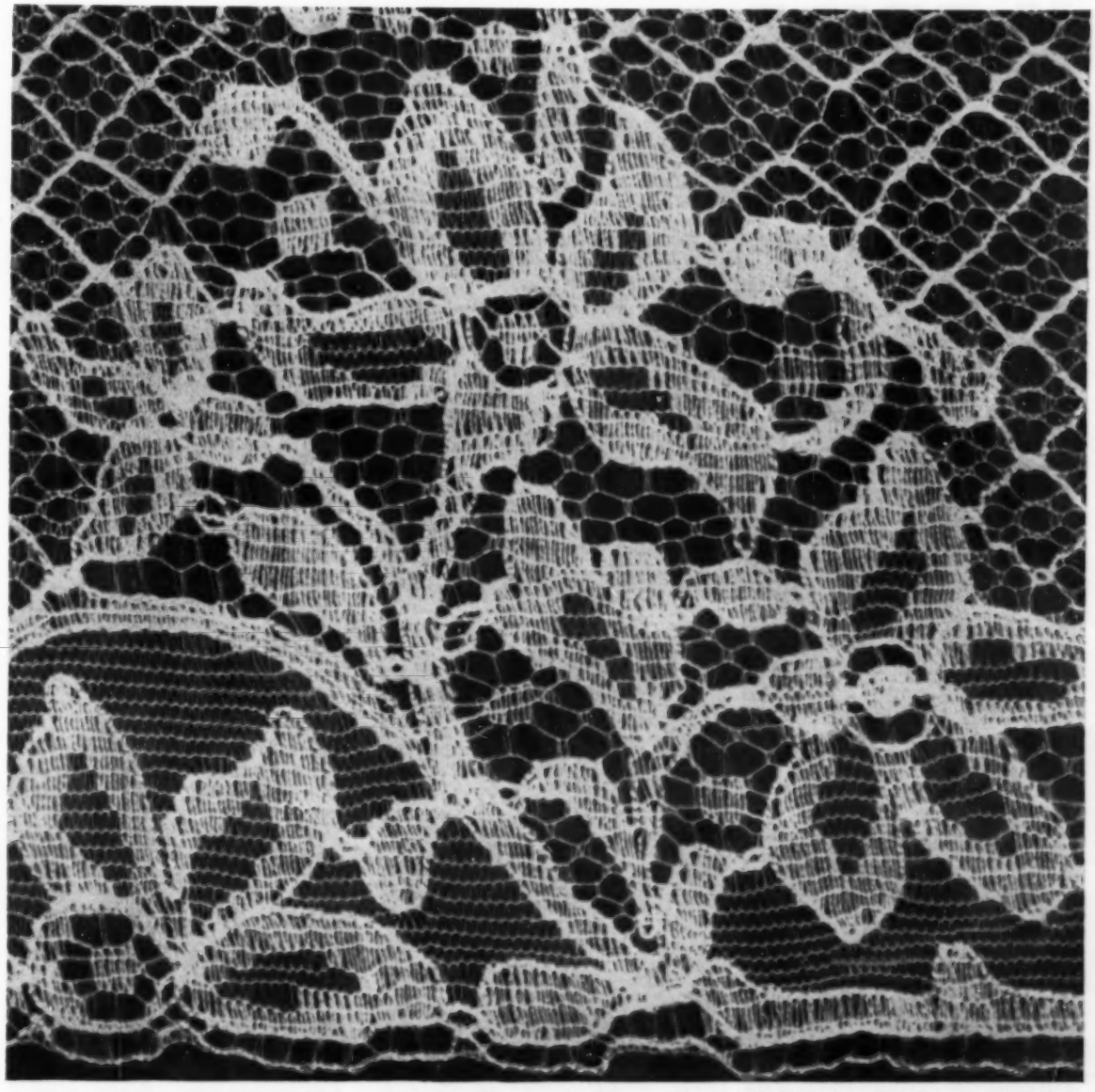

An original product using B & C yarn magnified 10X

Lace

The quality of BOGER & CRAWFORD Yarn is guaranteed — the highest tribute we can pay it!

Frederick Boger

the close-up of construction...

You get fine *lace* every time with BOGER & CRAWFORD Spun Nylon yarn. B & C quality yarn is your cue. Illustrated is an unretouched photograph of a new *lace* made with B & C yarn. Judge for yourself the distinctiveness of the product. Note the appealing closeup of construction!

You are invited to write today for full advantages offered by B & C quality yarns. Always guaranteed.

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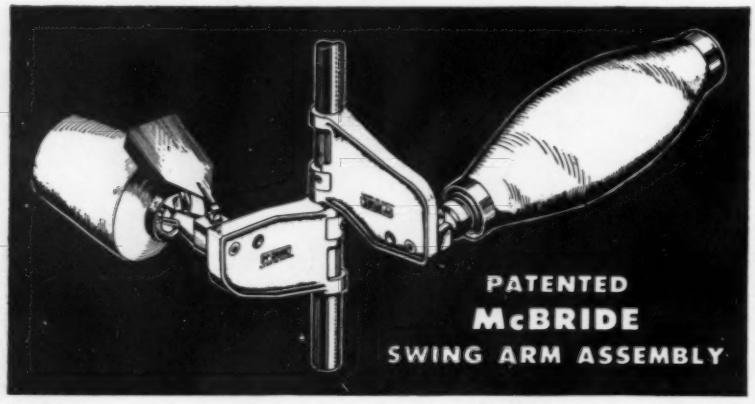
McBRIDE CREEL CORNER

NEW SWING ARM ASSEMBLY FOR McBRIDE CREELS

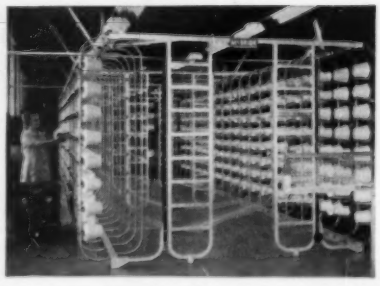


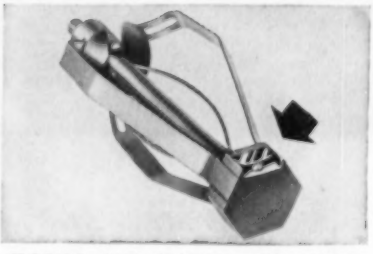
To meet the demand for equipment to accommodate the modern heavier and longer yarn packages, Edward J. McBride Co., Inc., have developed a new Swinging Package Arm for Magazine Creels. Besides being of more substantial construction, the new arm has an adjustment to vary the swing radius while retaining the patented Ball Retent Positioning Lock.

The Bowed Spring Spindle is a separate detachable unit making replacement or repositioning a simple operation without any dismantling.

McBride Quik-Change Cone Holders and Combination Adapters for Chemstrand and DuPont pirns are used in conjunction with the Bowed Spring Spindle. Together the Bowed Spring Spindle and the Quik-Change Cone Holder will handle most types of packages.

A new, self-adjusting Anti-Snagging Pad which follows the back edge of the package during draw-off is also featured and is optional. This thick polyurethane pad gently but firmly follows the contour of the package and is the only self-adjusting pad that continuously keeps the yarn from falling off the back of the cone.





McBRIDE QUIK-CHANGE CONE HOLDER

LET McBRIDE STUDY YOUR WARPING SITUATION. YOU MIGHT BE SURPRISED WITH THE COSTS YOU CAN SAVE, THE IMPROVED QUALITY IN THE WARPS YOU PRODUCE.

CREELS for every purpose, CONE HOLDERS, STOP MOTIONS, TENSION CONTROLS, WARP BEAMS, FLANGES, CARPET INSPECTION TABLES, METAL AND WOOD ROLLS.

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DEVELOPMENTS TO WATCH

NEW BLENDS . . . for knitwear will include combinations of Orlon and Ban-Lon yarns. The result is a boucle knit with an interesting textured surface and a soft hand.

"STRICT GOOD MIDDLING" . . . may become a new standard for cotton on Aug. 1, 1957, if a proposal before the U. S. Dept. of Agriculture is adopted. The new standard would cover cotton that is better in color, leaf, and preparation than Good Middling, the present highest standard for Upland cotton.

VINYLON'S WEAKNESS . . . poor resistance to heat, has been overcome by Japanese scientists. Bombarding the fiber with deuteron rays from a cyclotron or with gamma rays from cobolt-60 raises its heat resistance to better than 150° C. After radiation, the fiber is heated to 120° C. for an hour to get the final effect. Solvent resistance is also improved by radiation.

DYNEL BONDED FABRIC . . . 72 ins. wide in rolls 45 yds. long may strike a sales spark in filter fabrics, gaskets, weather stripping, marine equipment, and sound-absorbing material. This nonwoven fabric is Felter Co.'s newest development.

TERRY TOWELS . . . will become more popular for kitchen use. Reasons: the towels soak up water like a sponge, dry dishes better, do not have to be ironed, and come in attractive designs.

FULL-FASHIONED MACHINE . . . with 40 heads is being made by a German machine builder. The machine is 54 gauge and knits 100 courses per minute.

News Briefs

A miniature spinning plant that permits 1-oz. samples of cotton or blends to be spun into yarn for evaluation and color matching has been developed by Shirley Institute, England. Interest is so great that the Institute has asked Textile Machinery Makers Ltd. to manufacture the equipment for sale.

Research projects now under way at the Clemson School of Textiles include a method for evening roving

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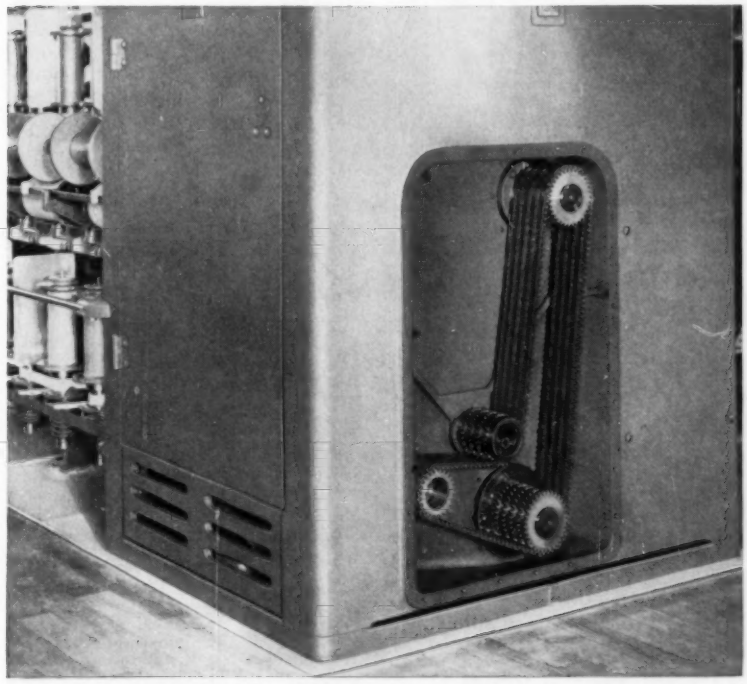
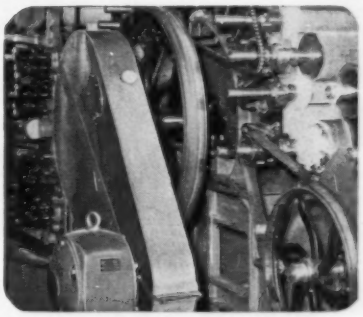
Here's the record of LINK-BELT silent chain



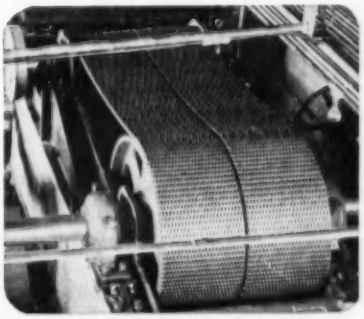
How do your drives compare?

. . . REVERSE ROTATION OF SHAFTS. Link-Belt duplex silent chain — capable of driving from either side of chain — operates multiple shafts on this uptwister.

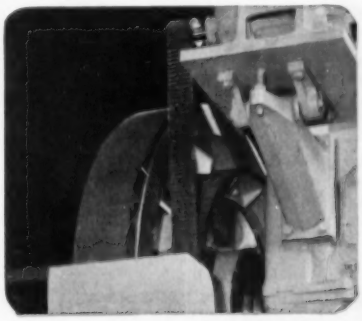
On fixed center drives, proper chain tension can be maintained with automatic or manual adjusters.



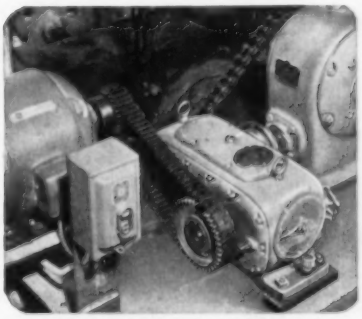
. . . UNDER ADVERSE OPERATING CONDITIONS. Humidity, heat, cold do not lower this chain's better than 98% efficiency.



. . . AT LARGE OR SMALL HP. A versatile line, these drives are available from fractional to thousands of hp.



. . . WITH LARGE RATIOS. Operates efficiently on extremely short centers at ratios as high as 10-to-1.



. . . IN LIMITED SPACE. Easy to assemble in close quarters, silent chain permits built-in drives, compact housings.

. . . AT HIGH SPEEDS. After 13 years on this newspaper press at speeds up to 4700 fpm, silent chain is still efficient.

For more details and advantages . . . for complete selection and technical data — ask your Link-Belt office or authorized stock-carrying distributor for a copy of 88-page Book 2425.

LINK-BELT

SILVERSTREAK SILENT CHAIN DRIVES

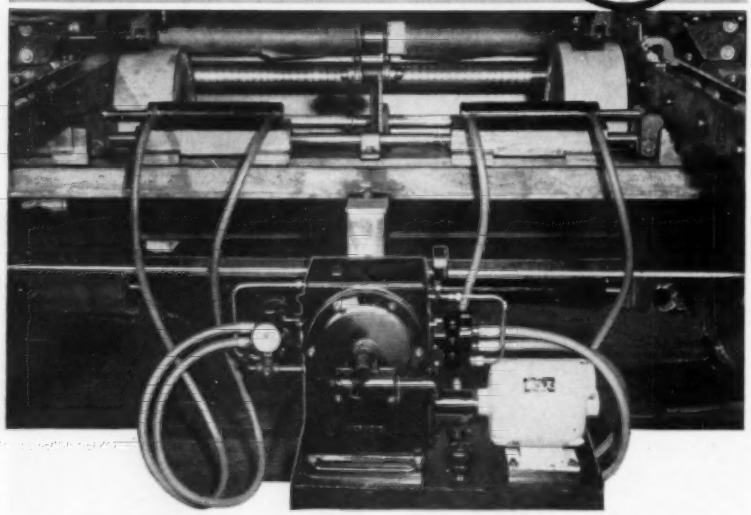
LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World. 14,038

For more data, write this page number on Reader-Service card. →

ASKANIA FINISHING MILL → NEWS

Automatic Cloth Guides for
TENTER FRAMES, LABEL MARKERS,
TUBERS and EXAMINERS

ASKANIA JET PIPE FOR DEPENDABLE CONTROL



PRODUCE MORE AT LOWER COST!

New Askania Application Bulletin Shows HOW

ASKANIA'S new REGULATOR APPLICATION BULLETIN NO. 22.1 is now off the press and available to the textile industry. It will be furnished upon request to anyone interested in specific details concerning the application of ASKANIA Automatic Cloth Guides to Tenter Frames of all types ...to Tubing and Examining Machines...to Label Marking Machines.

It will explain how the Cloth Guide automatically handles any cloth, including flimsy lace, delicate silks, coarse mesh cloth, synthetics, *without contact with the cloth.*

WELL ILLUSTRATED—You'll find the above illustration showing the Askania Automatic Cloth Guide Control applied to a tentering frame typical of the 11 special photos and drawings used to provide the type of information you need to evaluate your own cloth guide potentials.

IMPORTANT FACTS— *For instance, Bulletin No. 22.1 contains the answer to these questions:*

1. How ASKANIA controls assure clipping, pinning closer to the selvage edge.
2. How the controls can be quickly and easily installed on new or existing machines by any competent mill mechanic.
3. How the operator is freed to examine the cloth.
4. Why the controls react to the flimsiest material with instant speed and powerful force on even the heaviest tenter frames.

MODEL SELECTION—Get full information on ASKANIA Cloth Guide Models and how to select the most economical unit for your own use. For your personal copy, write today to Askania Regulator Co., 274 E. Ontario Street, Chicago, Illinois.

ASKANIA REGULATOR COMPANY
"CONTROLS FOR INDUSTRY"
HYDRAULIC, ELECTRONIC CONTROLS & SERVOS, GENERAL SYSTEMS, ENGINEERING & COMPUTER SERVICE, VALVE ACTUATORS & CYLINDERS

A SUBSIDIARY OF GPE

sliver, a two-for-one tire-cord twister, a shuttle check and picking motion for looms, yarn elongation, light radiation in dyeing, a knitting machine without needles, a carding method

CONTINUED ON PAGE 182

Letters From Readers

What's on your mind?

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinions appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, Round Table, TEXTILE WORLD, 330 W. 42nd St., New York 36, N. Y.

WHY SUPERVISORS CRACK UP

Dear Editor:

. . . The editorial Mr. Thomas wrote in July was very good and true in a lot of ways ["What Causes Supervisors To Crack Up?" TEXTILE WORLD, July, '56, p. 77].

I experienced something like it in the last four years of work. I had an assignment that I think was too much for me at the time. I was 62 years old. The mill brought in 20 ring frames. I had never had experience on ring, only cap and flyer. So I had to learn how to piece up ends, doff, and do other things that were different from what the help had been used to.

Our machinists put them up, and I don't think they had ever seen a ring frame. So I had to work along with them, teach the help how to spin, doff, and take off travelers, and show the fixers how to fix things on the frames.

All this work and pressure made me crack up in 1951. I had to stay home eight weeks. Then again in

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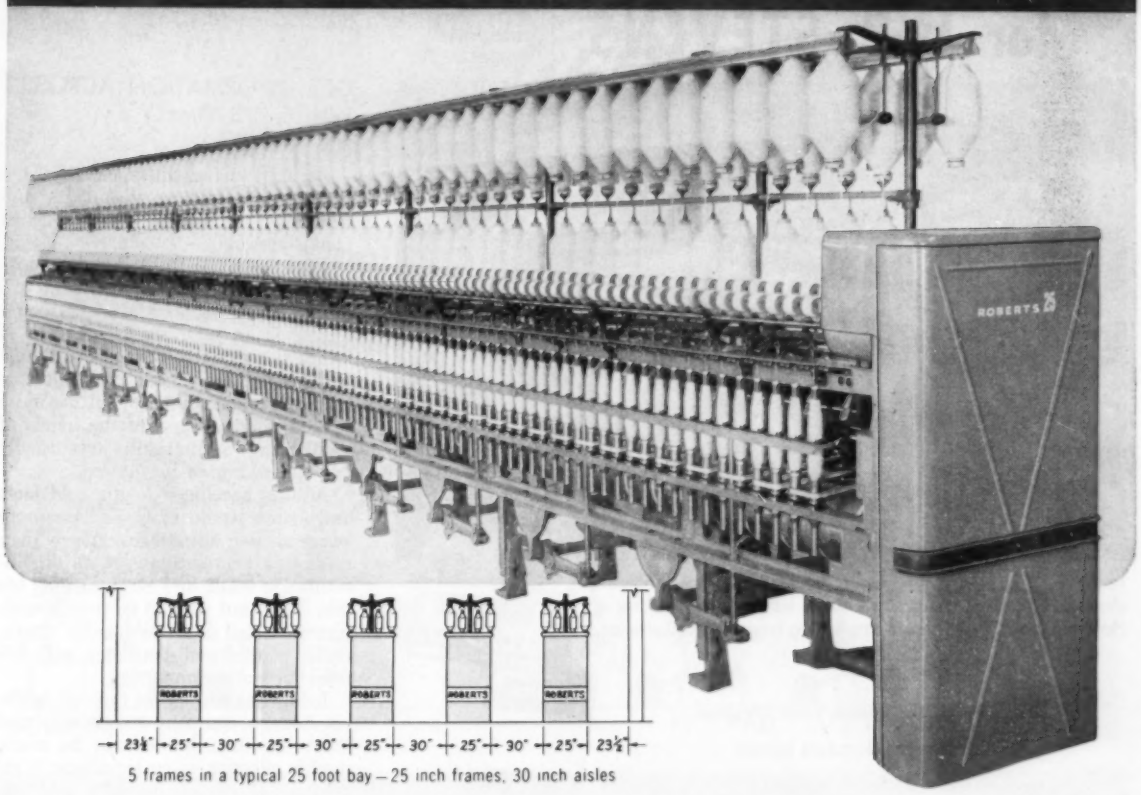
ROBERTS 25 SPINNING FRAME

- 25 inches wide
- 25% more yarn from same floor space
- 25% less building for same production
- 25% saving in building and utility cost



5 frames in a typical 25 foot bay—25 inch frames, 30 inch aisles

TRIED AND PROVEN. The Roberts 25 Spinning Frame is simple and straightforward, free from radical innovations or gadgets. It embodies all the tried and proven features most wanted in a modern spinning frame giving highest production and lowest maintenance.

ROBERTS DRAFTING. Roberts Double-Apron Drafting produces highest break factors, best yarn evenness and lowest ends down in a range of drafts from 10 to 60, for yarn numbers from 2's to 100's, in cotton, synthetics or blends.

SMALL, MEDIUM OR LARGE PACKAGES. The Roberts 25 Spinning Frame is available in gauges from 3 inches to 4½ inches and can be arranged for direct filling on 8 or 8¾ inch quills or for warp up to a 3 inch ring and 12 inch bobbin.

ALL BALL BEARING HEAD. The all ball bearing head design is outstanding in its simplicity and flexibility. Thirty greased-for-life ball bearings of one size are used and all plain bearings and studs eliminated. All gears in the head are hardened and have one pitch, one width, one bore and one size key, making them completely interchangeable. Two wrench sizes fit all shafts and tightening points. Draft Constant can be varied simply from 400 to 3200 and Lay adjusted for coarse or fine numbers by a simple gear change.

STANDARD FEATURES

Included as standard equipment are Roberts Ball Bearing Spindles, Roberts built-in Suction Cleaning, Roberts AeroCreels and 8 inch Cylinder Drives.

COMPARE ALL 3

For high production, top yarn quality, large packages, low maintenance expense, dependability—and, at the lowest investment per spindle—Roberts Spinning is second to none in America today.

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

For more data, write this page number on Reader-Service card. →

Automatic Packaging saves more...sells more, is better protection for J. P. STEVENS

SHEETS AND PILLOW CASES STEVENS UTICA-MOHAWK

For over five years of volume production, Utica-Mohawk sheets and pillow cases have been better wrapped on a Hayssen; neat, tight, clean, appealing from mill to customer.

● Your Distributors, your Dealers, your Customers demand better protection and Sales-Appeal! J. P. Stevens, like hundreds of others across the country and around the world have found they can meet these demands at less cost with Hayssen Wrapping.

We can save you money over your present wrapping system, too, and give you added protection and sales appeal.

Let our experienced packaging engineers help you with your packaging problems. WRITE US TODAY!

HAYSSEN

MANUFACTURING COMPANY • Dept. TW-10 • SHEBOYGAN, WIS.

first in Automatic Packaging Since 1910

Albany • Atlanta • Boston • Chicago • Dallas • Denver • Detroit • Houston • Jackson, Miss. Los Angeles • Minneapolis • New York • Philadelphia • St. Louis • San Francisco • Montreal • Toronto

1952 I was out for six weeks and really was getting into bad shape again when the mill closed. We had started to make a nub yarn, and I had to give a lot of my time to that besides carrying on with the ring frames.

What happened to me was really too much, but I suppose it was typical of a lot more men. . . .

RICHARD L. COOPER
Southbridge, Mass.

GET INFORMATION ACROSS WHILE IT'S TIMELY

Dear Editor:

As mill management reviews the matter of employee advantages and fringe benefits, certain well-established facts stand out.

First, even the most innocent-looking item of this kind usually costs real money. Second, few workers could engage in an intelligent discussion of either the extent or expense of these benefits. Third, management recognizes its responsibility for getting more of this information into the hands of employees. Fourth, results have usually left something to be desired.

Adding timeliness to the cold facts and figures would make workers more aware of their advantages. A new man can't be expected to absorb all this information while he's busy learning his job. Why not plan to go over it with him in detail after he has his duties under control and can listen with his undivided attention?

Informing employees through bulletin boards, company magazines, and letters to their homes can be made doubly effective when timeliness is included. If certain benefits and advantages are receiving special notice in the news, be ready to point out what your mill is doing in that field. The facts mean something then because they are tied in with current interests.

Try to anticipate what employees will have uppermost in their minds when they read your messages. Slant your talk about benefits to coincide with their thinking, just as merchants offer their suggestions when the market seems to be receptive. Tell about each point at the time that the worker can best apply its importance to his individual thinking.

Your mill has many advantages that have been only partially sold to your employees. Shifting the emphasis to match the appeal of timeliness can be helpful in securing the high morale you should get in return for the tremendous cost of fringe benefits and advantages.

GEORGE M. DODSON
Harrisburg, Pa.

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Top Quality Cloth... Produced Faster!

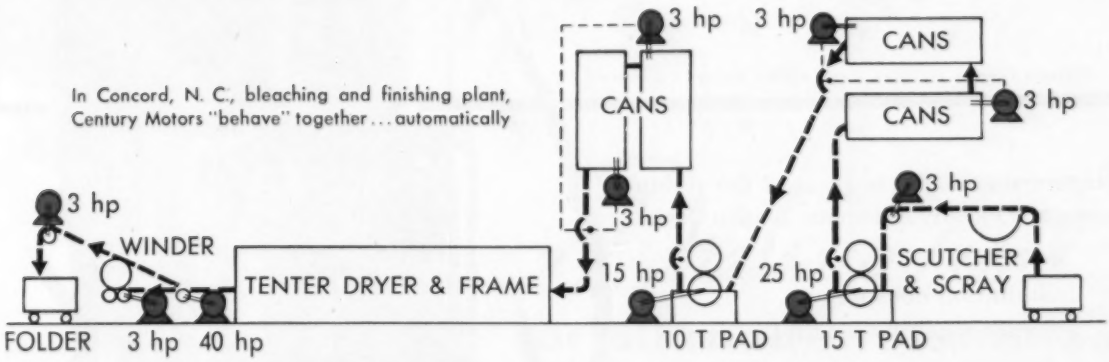
Precise speed correspondence of

Century

SELECTIVE SPEED DRIVE

automatically controls processing of this Tenter Range

In Concord, N. C., bleaching and finishing plant, Century Motors "behave" together... automatically



From scutcher and scray, through padders, dry cans, tenter dryer and frame, and winder or folder . . . cloth travel through this Tenter Range is precisely controlled by a Century Selective Speed Drive.

A 40 H.P. motor automatically "leads" the other 9 motors of the Drive—and all 10 motors are kept in an extremely accurate, constantly maintained speed correspondence. In its first 14 hours of operation, this range processed 54 miles of cloth . . . and is running like clockwork.

Century has more than 50 years' experience in engineering DC motors. Whatever your problems in textile processing drives, our application engineers will be glad to talk with you. Call or write your nearby Century District Sales Office or Authorized Distributor.

Performance-Rated© MOTORS
1/20 to 400 H.P.

CENTURY ELECTRIC COMPANY

77B

1806 Pine Street • St. Louis 3, Missouri • *Offices and Stock Points in Principal Cities*

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THIS NEW AUTOMATIC TENSION DEVICE*

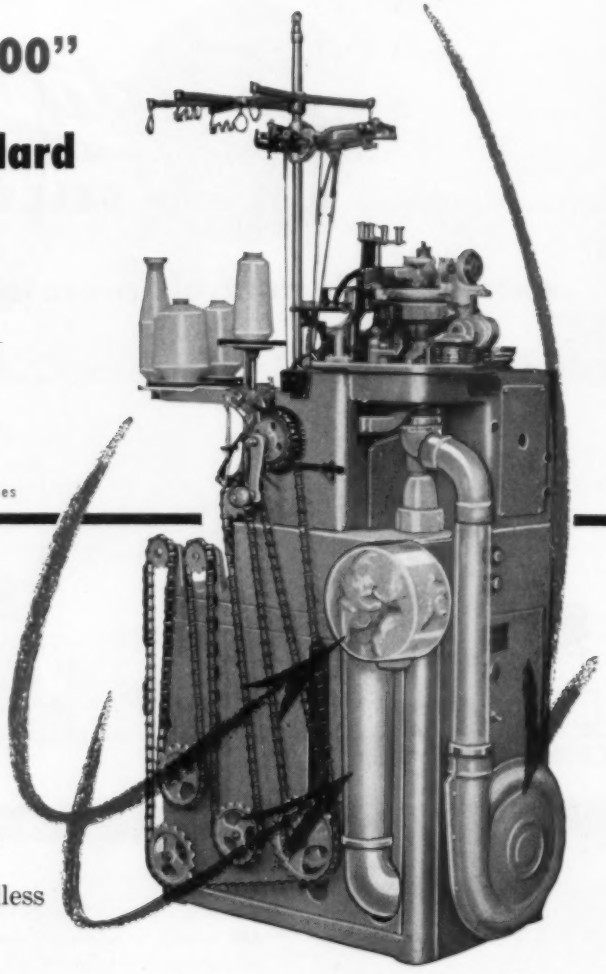
on the FIDELITY "400"

Sets the New Standard

in Seamfree

Stocking Quality!

*Patents Pending in United States and all Foreign Countries



Compare the unique features of the revolutionary **new** Fidelity Automatic Tension Device:

- Installation *does not* increase machine height!
- Completely air-operated—no mechanical arms or contrivances!
- Uniform tension is maintained regardless of knitting speed!
- Requires no resetting if machine is hand racked!
- Nylon retainer on transparent receptacle assures no-snag removal of stockings!
- Totally self-contained unit—easily installed without auxiliary air inlets!

Compare—then decide to meet the *new* standard of production quality *now*, with the superior new Fidelity Automatic Tension Device . . . designed for use with the electronically controlled Fidelity "400" and other makes of knitting machines. Write today for details . . . or visit our showrooms.

Designers and Builders of Intricate, Automatic Precision Machines

SINCE 1911

FIDELITY MACHINE COMPANY, INC.

3908-18 FRANKFORD AVENUE, PHILADELPHIA 24, PA.

EXPORT DEPT.: 25 BEAVER STREET, NEW YORK 4, N.Y.

SOUTHERN SALES OFFICE: 607 PROVIDENT BUILDING, CHATTANOOGA, TENNESSEE

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"Dress-up Time"

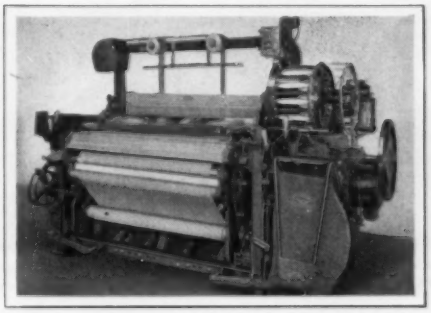
for all modern families

. . . and for all modern weaverooms, too!

Good clothes . . . and enough of them . . . are a certain measure of an individual's (or a family's) self-respect, success, and position in life.

You can say much the same thing about weaverooms. Modern looms . . . and enough of them . . . are the *exact* measure of a mill's success, both now and in the future. And what the "well-dressed weaveroom" is wearing nowadays are looms like C & K's new Multi-Purpose models . . . the *only* looms that can be converted overnight from plain to fancy goods and back again, at will. Also, there are C & K's W3 and W3A Looms with the exclusive *Select-A-Pic* feature that permits the automatic weaving of many pick-and-pick fabrics that cannot be woven automatically by any other method. Not to mention C & K's fabulous jacquard mechanisms, new narrow-fabric looms, C looms, S looms and other modern weaving equipment.

It's good business to "dress up" your mill's weaverooms right now with new and modern C & K Looms that will put you at the head of the profit parade *and keep you there.* If you saw C & K's new **M-P** Looms that stole the show at Greenville . . . *then see C & K today.*



CROMPTON & KNOWLES *Corporation*

WORCESTER 1, MASSACHUSETTS, U. S. A.

CROMPTON & KNOWLES CORPORATION C&K WORCESTER, MASS. U.S.A.

CHARLOTTE, N. C. • PHILADELPHIA, PA. • ALLENTOWN, PA. • Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I. • Crompton & Knowles of Canada, Ltd., Montreal, Quebec

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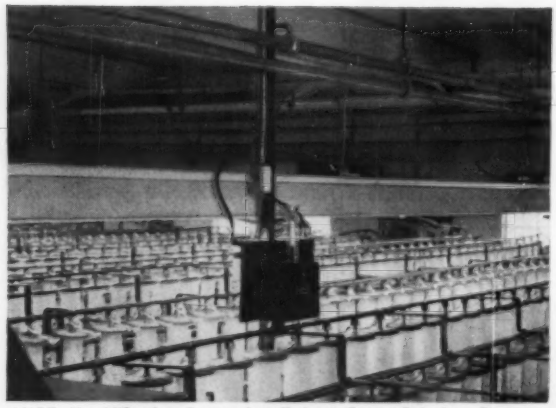
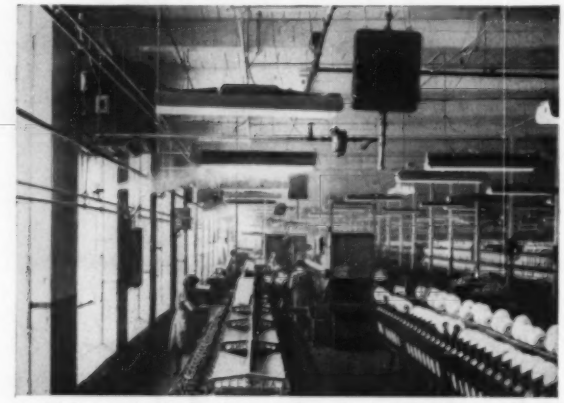
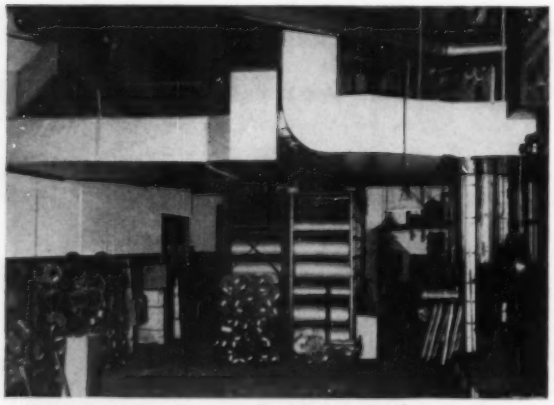


AMCO Humidification System installed at Caron Spinning Company, Robesonia, Pa. The highly sensitive AMCO Cyclestat Control holds humidity within narrow limits.



AMCO Evaporative Cooling System in Texas Textile Mills, McKinney, Texas. Note window units which control mixture of fresh and recirculated air.

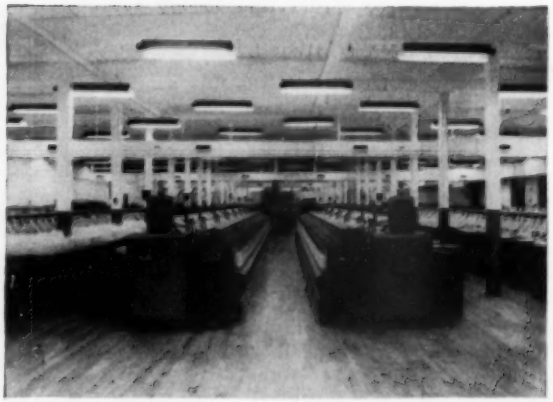


AMCO Unit Dry-Duct System at The Windsor Manufacturing Company, Philadelphia, Pa. The entire unit is installed overhead out of the way.

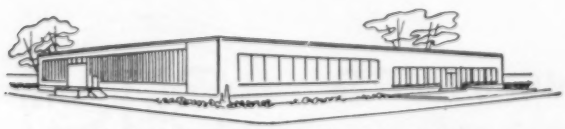
There's an AMCO AIR CONDITIONING SYSTEM designed for YOU!

When you think of air conditioning, remember that AMCO offers systems and equipment for every manufacturing requirement and every climatic condition. There are four different types of AMCO systems, alone or in combination: humidification, evaporative cooling, unit dry-duct, or central station air conditioning. And because AMCO engineers have these four basic systems — plus all associated equipment and controls — they are able to offer you unbiased advice on the *best* system for your particular need.

If you want the facts about textile mill air conditioning, with the advantages and limitations of each system detailed, as well as answers to such questions as cost, adaptability, capacity, maintenance and operating expense, write for AMCO's booklet, "AIR CONDITIONING for the TEXTILE INDUSTRY". Or better still, ask AMCO to recommend, without obligation, the system best suited to your mill.



AMCO Central Station Air Conditioning in the Roving Dept., Highland Park Mills, Charlotte, N. C. This is AMCO's highly efficient split-system.



New Cleveland-Rowan Plant of the American Moistening Company. This modern plant is located at Cleveland, N. C. for the fabrication of duct work and sheet metal products.

AMCO

AIR CONDITIONING SYSTEMS since 1888

AMERICAN MOISTENING COMPANY, CLEVELAND, NORTH CAROLINA • ATLANTA, GA. • BOSTON, MASS. • CAMDEN, N. J. • PROVIDENCE, R. I.

FACTS about **NEW DEPARTURE BALL BEARINGS**

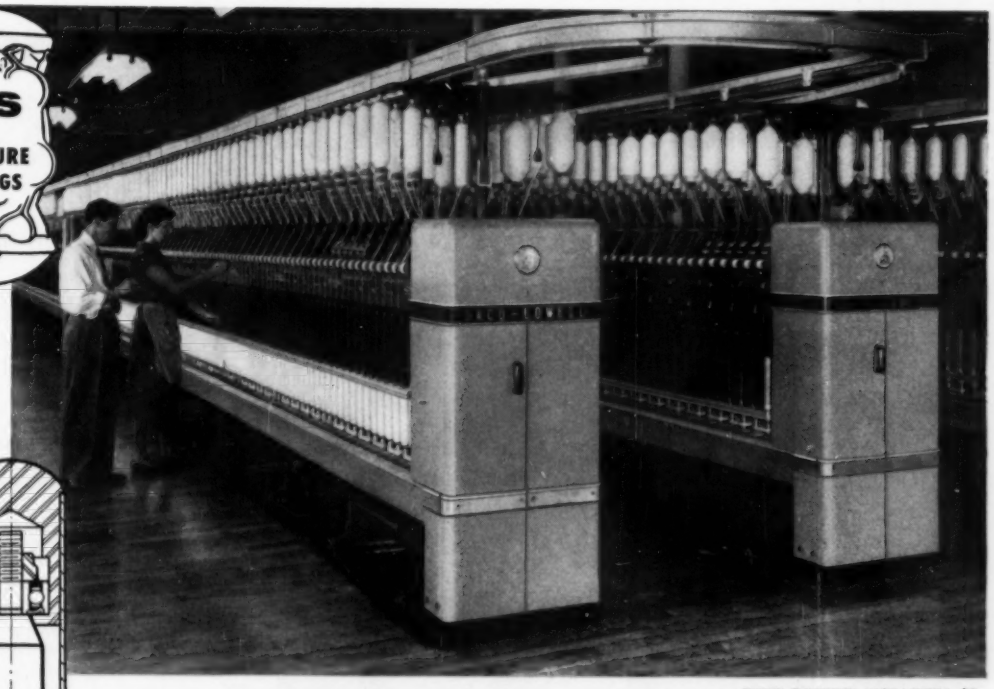
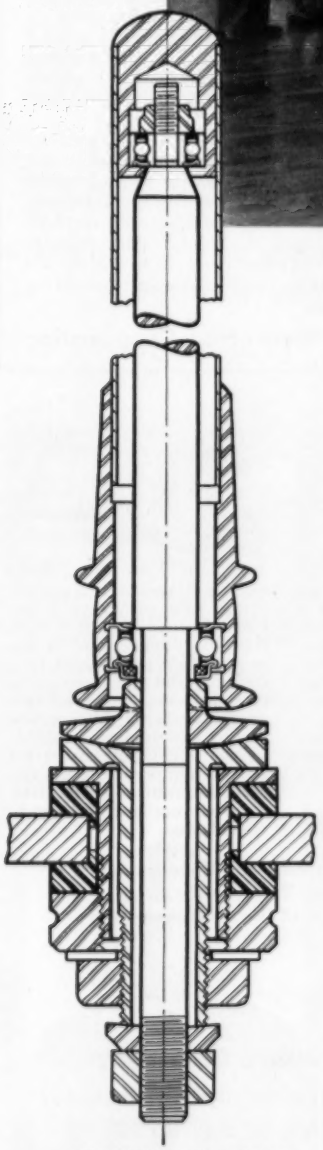


PHOTO COURTESY SACO-LOWELL CO.



SEE "WIDE WIDE WORLD"
SUNDAYS—NBC-TV

WHY LEADING SPINDLE MAKERS CHOOSE NEW DEPARTURE SEALED AND LUBRICATED-FOR-LIFE BALL BEARINGS

Cleaner yarn . . . lowest friction loss . . . virtually zero maintenance! These are major reasons leading spindle manufacturers choose New Departure sealed and lubricated-for-life ball bearings for spinning spindles.

By virtue of grease lubrication and highly efficient sealing, these bearings keep lubricant *in* and dirt *out*, eliminating the formation of oil mist. There is no oil-soaked yarn, no oil and lint mixture on the spindle rail. What's more, the need of relubrication or adjustment of these bearings is virtually zero throughout long life.

Equally important to the end user is the friction-free characteristic of New Departure ball bearings. Because these bearings operate with the lowest possible friction loss, top rpm with a minimum of power and longer tape life are assured.

Every day leading manufacturers are discovering more uses for the inherent advantages of the ball bearing. A letter to New Departure will secure for you information regarding the latest bearing applications in *your* field. New Departure, Division of General Motors, Bristol, Connecticut.

BALL BEARINGS MAKE GOOD PRODUCTS BETTER

NEW DEPARTURE
BALL BEARINGS

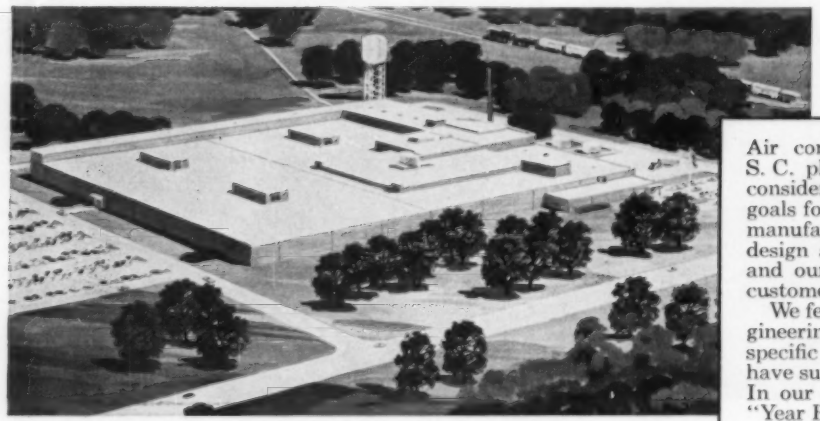
GM GENERAL MOTORS

NOTHING ROLLS LIKE A BALL

For more data, write this page number on Reader-Service card. →

Amerotron Corp. cites Bahnson research in air conditioning new plant

Bahnson Central Station "Year-Round" System fits exacting standards of modern Barnwell, S. C. woolen Mill



Amerotron Corporation's modern, integrated carded woolen mill recently completed at Barnwell, S. C.

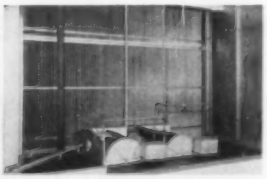
Engineers & Architects: **Lockwood Greene, New York, N. Y.**
General Contractor: **Daniel Construction Co., Greenville, S. C.**

Air conditioning our new Barnwell, S. C. plant involved several principal considerations: our planned operating goals for this mill; Amerotron's special manufacturing processes; the modern design and construction of the plant; and our obligations to personnel and customers alike.

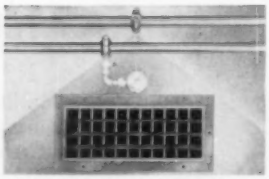
We feel that Bahnson's advanced engineering research and attention to our specific air conditioning requirements have successfully met those conditions. In our new plant, Bahnson's modern "Year Round" Central Station System contributes effectively to our aims for high quality production and operating efficiency.

Amerotron Corporation

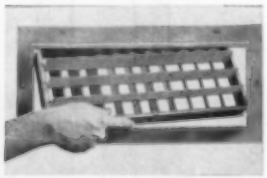
Modern Bahnson duct system, ceiling suspended, delivers saturated air under automatic control in proper proportion to the need. Custom designed, ductwork is quality built and securely connected for efficient air-handling. Bahnson type ESC Atomizers, mounted over discharge grilles, offer flexible supplementary humidification.



Bahnson Type B Suction Strainers in tank of Bahnson Type Y Air Washer automatically remove lint from re-circulated water and flush it away. Thus clogging of spray nozzles is prevented, and washer is kept operating at peak effectiveness. The Type Y Air Washer provides high saturation efficiency, requires minimum maintenance.



The self-cleaning pneumatic Type ESC Atomizer is a pioneering Bahnson design. For supplementary evaporation with the Central Station System, it provides fine spray quality with low compressed air consumption at economical operating cost. Electric or pneumatic modulating controls available for flexible regulation.



Special Bahnson adjustable grilles offer accurate directional control of air flow with four-way deflection. A removable core facilitates cleaning and allows access to duct interior. For even balancing and distribution, the wide, individually adjustable blades effectively direct air so that temperature and relative humidity are kept uniform throughout the conditioned area.

Bahnson engineering and research staffs offer you the experience and leadership of 40 years in air handling equipment design and manufacture. Your specific air conditioning needs receive top attention in the development of the finest system for application to your individual requirements.

91 OF THE TOP 100

Of the nation's 100 top textile manufacturing firms, 91 are users of Bahnson equipment!

Bahnson
COMPANY
WINSTON-SALEM, N. C.

WRITE US TODAY
for detailed information.
Ask for Bulletin 22A.

AIR CONDITIONING • CLEANING • VACUUM COLLECTION

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HFL
ENGINEERED

Improved LOOM PARTS

just what is HFL Engineering?

We define it as: "The intelligent blending of creative ideas with the wisdom that comes from experience"

In designing and making loom parts, it has been the undeviating purpose of this company for 69 years to improve them . . . *to make them better.* Sometimes the improvement is in the form of a design change, sometimes the improvement primarily consists of using better materials — and sometimes, of course, it is a combination of both.

In this day of increasing cost per yard of woven goods — due to the high cost of labor and equipment — it is just good business sense to reduce your purchases of frequently-replaced loom parts *by using parts that are properly designed and engineered.*

Our competent Engineering Staff, working directly with many of the leading Overseers of Weaving of the country, is in constant contact with actual loom parts problems. Each HFL part, therefore, is individually tailored for its own particular requirements.

We offer you this service. Why not take advantage of our modern highly-developed facilities for producing proven parts . . . known everywhere as "HFL Improved Loom Parts"?

We welcome your inquiries.

Herman J. Malafey, Chief, Inspection Dept.

An HFL engineer for nearly 40 years, he served as "right hand engineer" to Homer F. Livermore in developing the HFL Improved Loom Parts which laid the foundation for the company's outstanding reputation. No loom part today can get by Mr. Malafey's department unless it's *right!*

Better because they're better engineered

L. George Urquhart, Chief Engineer

Joining H. F. Livermore Corporation in 1947, Mr. Urquhart came to us with a rich background of technical and engineering experience gained entirely in the textile industry. After taking post-graduate work at Worcester Polytechnical Institute, and at Rhode Island School of Design, he spent several years in the engineering departments of two of the country's leading manufacturers of textile machinery.

He then served for a number of years in a textile engineering consulting firm, working on textile machine design and engineering, weaving problems, loom operation and efficiency. Mr. Urquhart and his staff of capable young engineers are responsible for the research and development work of the company.

HFL
IMPROVED LOOM PARTS

H. F. LIVERMORE CORPORATION

ESTABLISHED 1887

EXECUTIVE OFFICES & PLANT
BOSTON 34, MASS.

SOUTHERN DIVISION
GREENVILLE, S. C.

SHELLENE® POLYETHYLENE

the clearest polyethylene for textile packaging

PREVENTS SOILING LOSSES

Remember!

we convert and print

- POLYETHYLENE ROLL AND BAGS
- POLY, CELLO, VINYL SHEET WRAPS
- SHELL-PLI CARTON OVERWRAPS
- CELLO-POLY WRAPS
- MYLAR * POLYESTER FILM BAGS AND SHEETS

You can practically eliminate loss of profits from soiling by packaging your textiles in Shellene. Retailers report this protection reduces markdowns from 10% to 1%.

Shellene gives almost perfect visibility. It is clearer than competitive films by actual measurement of light transmission. It's glossier, too—makes an attractive package. Shellmar-Betner's crisp, bright printing adds brand identification and extra eye appeals. And Continental's slip treated film facilitates packaging. Ask us today about the best materials and methods in textile packaging.

** Du Pont's registered trademark*

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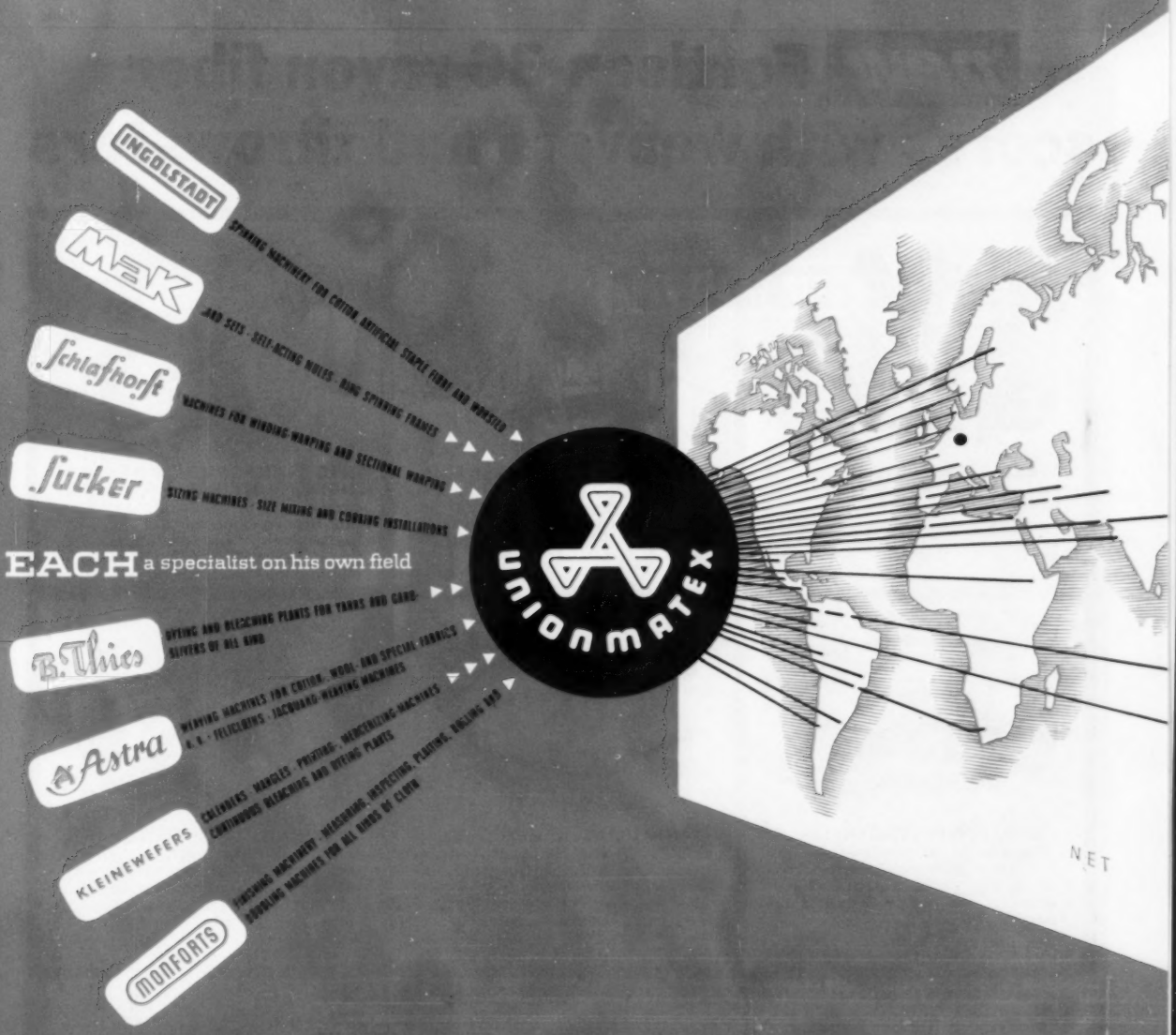
SHELLMAR-BETNER DIVISION

QUALITY PRINTERS AND CONVERTERS OF FLEXIBLE PACKAGING MATERIALS


INGOLSTADT
SPINNING MACHINERY FOR COTTON, ARTIFICIAL STAPLE FIBRE AND WORSTED
MAK
...AND SETS · SELF-ACTING MULES · RING SPINNING FRAMES
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EACH a specialist on his own field
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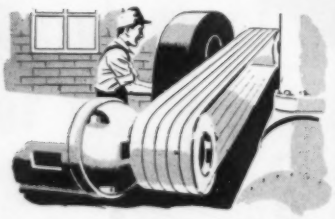
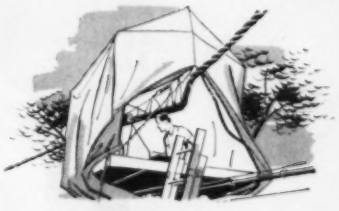
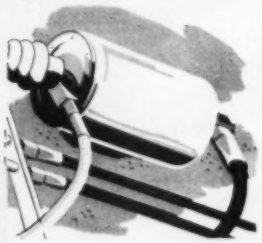
new Fortisan-36 rayon fiber scores with weavers and throwsters



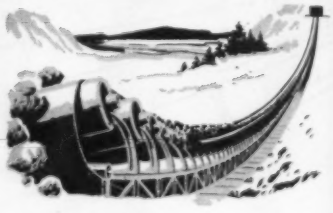
V-BELTS: Used as reinforcing cord or as cord fabric, dimensional stability makes possible matching belts. Cords are highly stable under atmospheric changes or work.



LINESMEN'S TENTS: Vinyl-laminated FORTISAN-36 fabric lets telephone linesmen work in the light. Translucent plastic can be used since FORTISAN-36 resists light degradation.

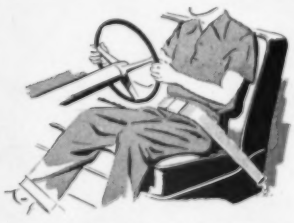


HIGH-PRESSURE BRAIDED HOSE: FORTISAN-36's superior weight and strength qualities permit lighter, safer, more flexible and pressure-resistant hose for general high pressure use.



CONVEYOR BELTS: FORTISAN-36 produces extremely strong yet thinner, lighter-weight belts. Good troughing qualities permit higher tensions and longer distances between centers.

TARPAULINS: Elastomer coated FORTISAN-36 flat yarn woven fabrics maintain dimensional stability and strength during processing and use; have excellent tear and puncture resistance.



WEBBING: FORTISAN-36 tent, cargo tie-down and automotive safety belt webbings woven with stuffer construction feature high strength, and good dimensional stability.

If you sell to the mechanical rubber goods, coated fabric and similar industrial markets, FORTISAN-36 can help put your product at the head of the parade.

This new high-tenacity, heavy-duty rayon made by saponification of acetate is fast becoming the fiber of choice for uses requiring

- **High tensile strength**
- **Minimum elongation**
- **Dimensional stability**

What's more, FORTISAN-36 is re-writing the book on weight/strength ratios for standard construction. Take a 42-oz. cotton fabric widely used in the rubber industry. You can actually duplicate its strength specifications with a fabric weighing only 21 oz. by using a Fortisan-36 warp of equivalent strength!

Write today for booklet TD 20A containing all the facts and figures on FORTISAN-36.

Celanese Corporation of America, Industrial Sales Dept., Textile Division, Charlotte, North Carolina. *Branch offices:* 180 Madison Avenue, New York 16; Pilgrim Square Building, 9 Overwood Road at W. Market St., Akron 13, Ohio (Telephone: TE 6-2392). Celanese®

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Fibers for Industry

FORTISAN® RAYON • FORTISAN®-36 RAYON • ARNEL® TRIACETATE • ACETATE • VISCOSE-RAYON

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SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

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SPINNING MACHINERY

FOR COTTON · ARTIFICIAL STAPLE FIBRE AND WORSTED

Planning and supply of complete spinning plants based
on latest experience in spinning technology and mechanical engineering
Spares for spinning machinery · Conversions of draft systems

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News about

B.F.Goodrich Chemical *raw materials*

TO MAKE MINIMUM CARE FABRICS SOFT AND STRONG—BLEND WITH HYCAR LATEX

YOU gain in wrinkle resistance when you treat cotton and rayon fabrics with melamine- or urea-formaldehyde resins. But you lose in tensile and tear strength, and the fabric often does not have desirable softness or hand. This problem can be solved by blending these resins with Hycar latex.

By this blending, the amount of resin required for wrinkle resistance can be sharply reduced. There is *no loss* in tear, tensile, and abrasion properties—on the contrary, these values are often higher than in the original fabric. The original soft feel of the fabric is maintained too. Result—minimum care features with no disadvantages!

Hycar latex is a versatile product improver for textiles. It upgrades denims . . . increasing abrasion resistance up to 300%. It can be used as an after-treatment to reduce crock . . . makes a superior binder for non-woven fabrics.

For information write Department EV-5, B. F. Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

Hycar
Reg. U.S. Pat. Off.
American Latex

B.F.Goodrich Chemical Company
A Division of The B.F.Goodrich Company

B.F.Goodrich GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors

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PRESTOW

...a new name for an old friend

You're going to see more and more of the name PRESTOW.

Every Stowe-Woodward roll with the exception of our special formulas such as Microrok, Sealskin, etc. will be called PRESTOW.

We hope you'll remember the name and use it; but more important, we hope you'll remember what it stands for . . . Stowe-Woodward roll craftsmanship . . . accuracy, consistency, fine finish, close control of density and crown . . . all of the factors which result in trouble-free performance on the machine.

Ask your Stowe-Woodward Sales Engineer about the advantages of PRESTOW rolls in your mill.

"RUBBER ROLLS with a REPUTATION"

STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

NEENAH, WISCONSIN • NEWTON 64, MASS. • GRIFFIN, GEORGIA

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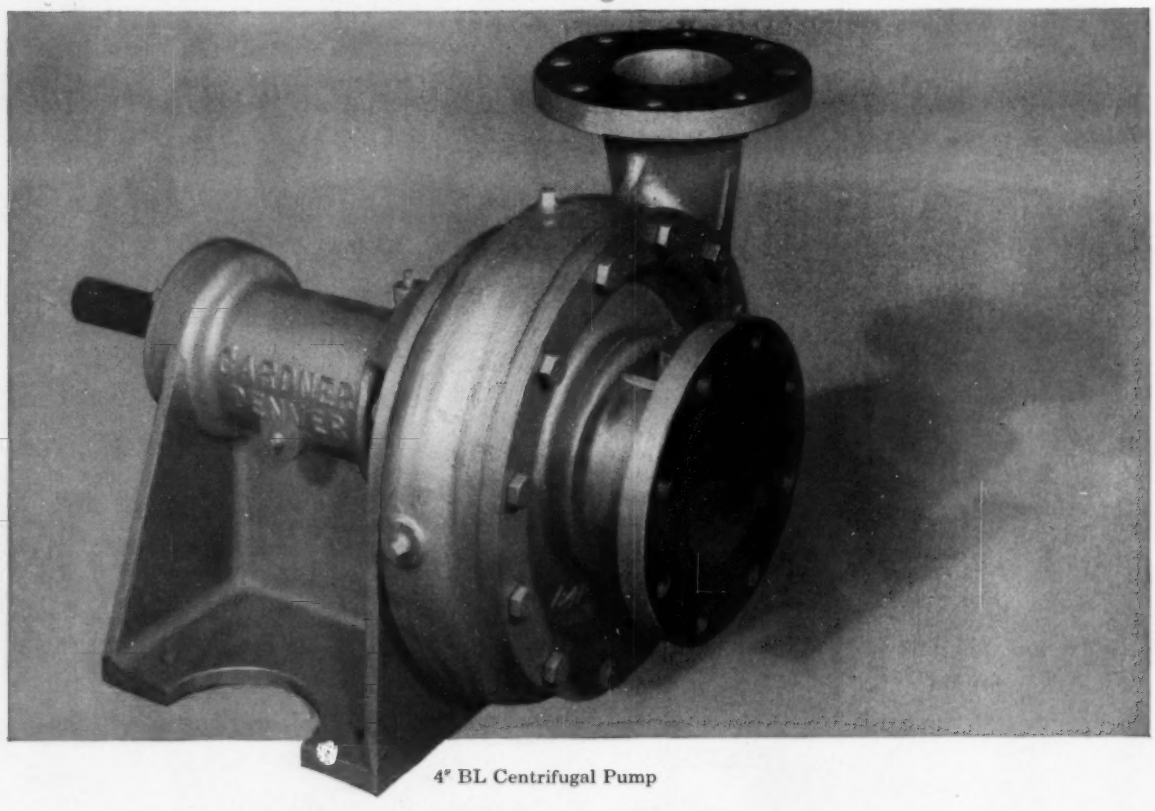
Gardner-Denver . . . Serving the World's Basic Industries



4" BL Centrifugal Pump

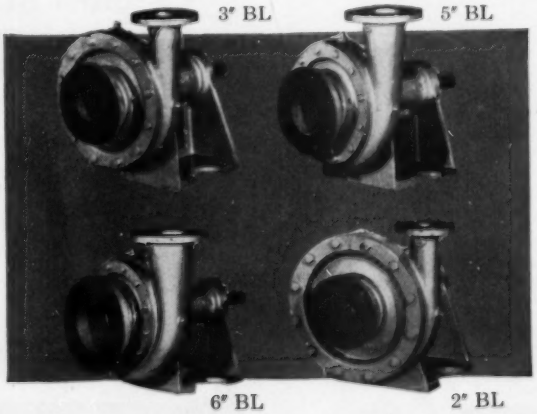
New Gardner-Denver BL Pumps

. . . stay efficient even when volume on head fluctuates

HERE'S NEWS FOR PUMP ENGINEERS: These new Gardner-Denver Centrifugal Pumps are designed to deliver peak performance over broader ranges of service conditions. BL pumps take variations—either in the head or water volume.

Each size (there are five to choose from) handles a wider-than-usual range of pressures and capacities.

Each has heavy-duty ball bearings, factory lubricated . . . extra large shaft to assure continual alignment . . . strong supporting frame . . . a trouble-free mechanical seal. Bulletin A-8 gives all the facts.



GARDNER-DENVER

THE QUALITY LEADER IN COMPRESSORS, PUMPS, ROCK DRILLS AND AIR TOOLS
FOR CONSTRUCTION, MINING, PETROLEUM AND GENERAL INDUSTRY

Gardner-Denver Company, Quincy, Illinois
In Canada: Gardner-Denver Company (Canada), Ltd., 14 Curity Avenue, Toronto 16, Ontario

ATLANTA, GA.; BIRMINGHAM, ALA.; KNOXVILLE, TENN.; WASHINGTON, D. C.; NEW YORK, N. Y.; PHILADELPHIA, PA.; PITTSBURGH, PA.; NEW ORLEANS, LA.; LOUISVILLE, KY.

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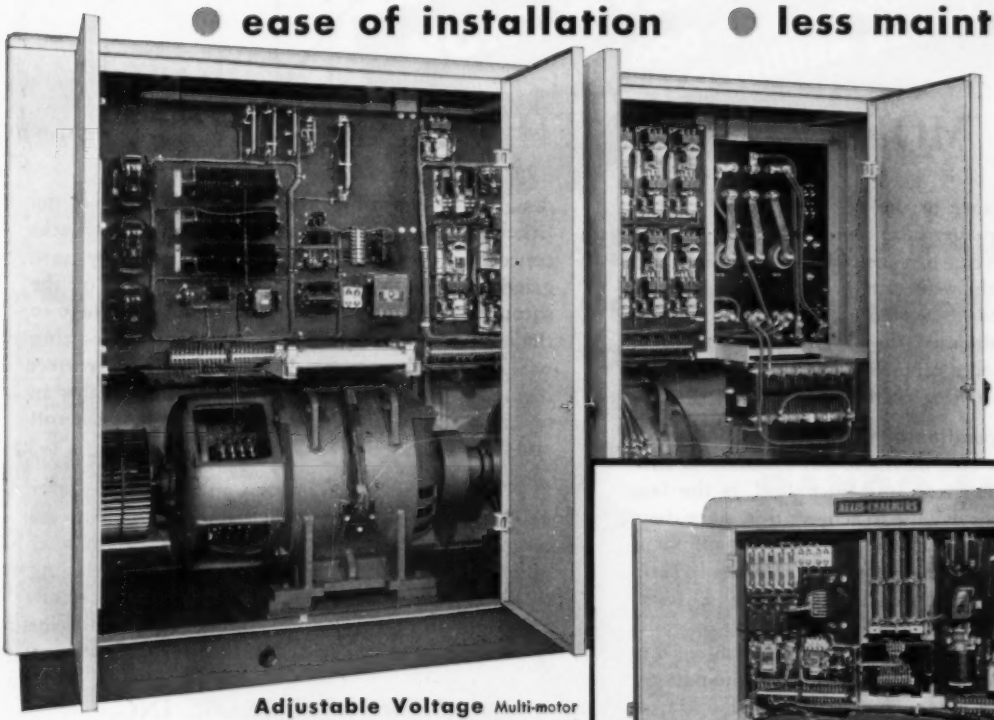
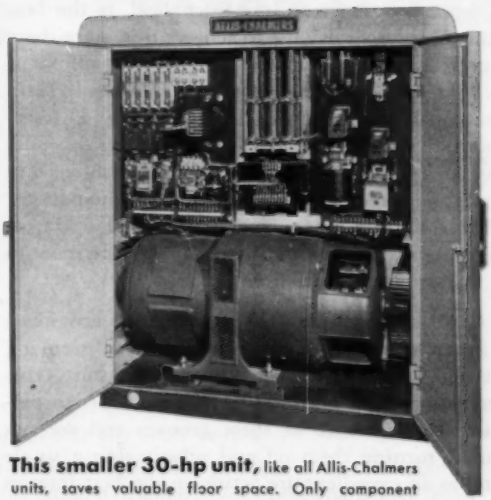
There's MORE dependable speed control

- controlled response
- no fragile parts
- ease of installation
- less maintenance



Adjustable Voltage Multi-motor *Package Drive* Unit, rated 125 hp, is ideal for many textile applications.



This smaller 30-hp unit, like all Allis-Chalmers units, saves valuable floor space. Only component needed near your equipment is the drive motor.

Whether the operation is washing, drying, printing, dyeing, bleaching, slashing or warping — every one of the design features of the Allis-Chalmers Adjustable Voltage *Package Drive* Unit assures you an easy, dependable means of power conversion.

Key to dependability of these *Package Drive* units is the use of a magnetic amplifier to excite the field of the power unit m-g set. Sturdy and simple, this amplifier has no moving parts to wear out . . . no fragile components to be affected by vibrations. AND — there's no wasteful "warm-up" time needed. At the turn of a dial, you get immediate speed control.

Cost-saving assembly

M-g set and control components are assembled in the power unit enclosure at the factory — saving you installation costs. Enclosures used for 30 through 200-hp units are completely collapsible and may be easily disassembled without loss of rigidity. Larger units have separately driven blowers to provide positive ventilation and pressure even when unit is idle.

Available in units from 5 to 200 hp, the *Package Drive* unit is ideal for any application requiring adjustable speed. Contact your nearby Allis-Chalmers sales office or write Allis-Chalmers, General Products Division, Milwaukee 1, Wisconsin.

A-5189

ALLIS-CHALMERS

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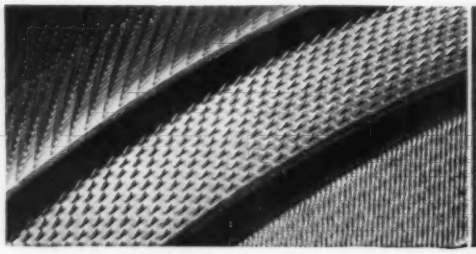

Ashworth Tips ON CARDING

No. 34 in a Series

MORE ABOUT THE LICKERIN

The importance of the lickerin assembly in its relation to the quality of carding cannot be overemphasized. From time to time, when mentioning the control of neps, the reduction of card sliver variation, raised or blistered fillets, and in matter pertaining to the feed end of the card, the lickerin and its adjacent parts have assumed a prominent place as factors to be considered when taking corrective measures.

Uniform separation of fibres from the fringe of picker lap is not only desirable but essential. A lickerin wound eight starts, one inch lead, is the best medium in present day use to achieve this, since there is a uniform distribution of points over the roll's surface. The six start (six strands per inch) lickerin offers equally uniform distribution but with fewer points per square inch. Those wound single strand, eight threads per inch, are often found with teeth in clusters and sometimes arranged in a definite pattern; neither condition being conducive to the optimum in fibre separation and both tending to contribute to nep formation and variation.

Card manufacturers have long since recognized the importance of the one inch lead when grooving lickerins — whether of the six or eight start type. Repair shops who make every possible effort to perpetuate the existence of these grooves and are not given to turning them off and substituting a single strand as an expedient are acting in the best interest of the mill.

Tips Nos. 5 and 7 mention that lickerins should be full size. The lickerin screen of every card was designed to conform to the specified diameter of the lickerin. When the latter is undersize it not only lacks concentricity with the screen but, as many card grinders have found, often requires filling of the shrouds in order to be set with the proper gauge to the cylinder. The reputable repair shop, by inserting wire of a height calculated to bring about the correct diameter of the lickerin over the points, helps in maintaining the proper relationship between the roll and the screen.

We believe that one highly important requisite for good carding is a sharp, full size lickerin, with the original grooving maintained with respect to number of starts and pitch, and the entire assembly, including mote knives, screen and feed plate nose in good condition and properly set. The mill should settle for nothing less.

ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River*†‡ Worcester‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
E. G. Paules, Representative — Los Angeles, Calif.
*Factory †Repair Shop ‡Distributing Point
3 Factories • 6 Repair Shops • 7 Distributing Points

PRODUCTS AND SERVICES

Clothing for Cotton, Wool, Worsted, Silk, Synthetic Fibre and Asbestos cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Topflats Reclothed.

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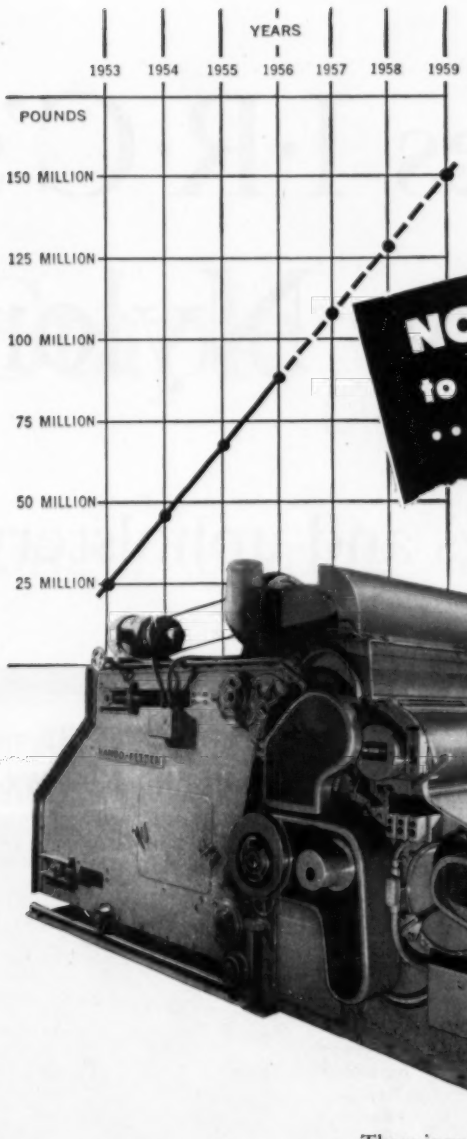
Ashworth PIONEERS IN CARD CLOTHING

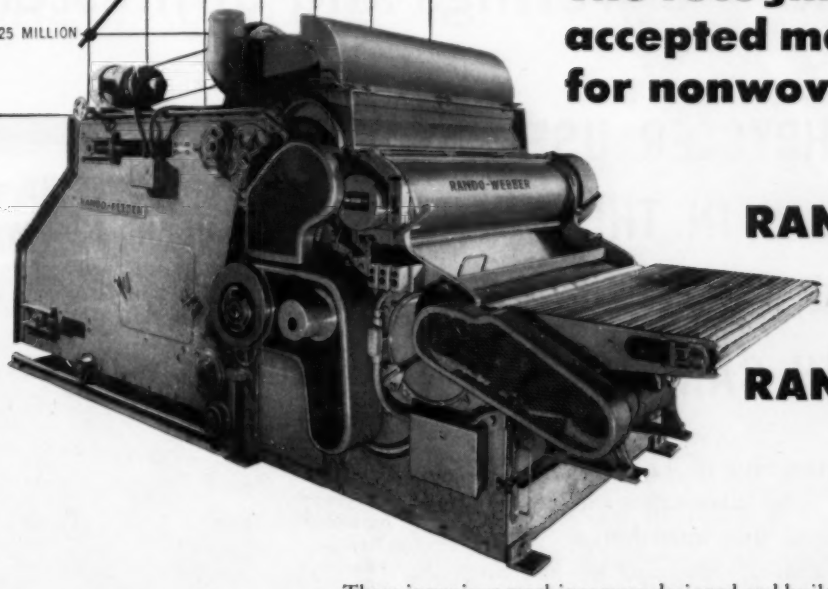
3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 DISTRIBUTING POINTS



NONWOVENS PRODUCTION

to increase 600% in 6 years
...reaching 150 million pounds

The recognized and accepted machine for nonwovens



RANDO-FEEDER®
and
RANDO-WEBBER®

These ingenious machines were designed and built solely for the production of nonwovens. They produce a higher quality fabric, faster and more economically than by any other method.

The RANDO-FEEDER and RANDO-WEBBER produce a continuous, uniform, non-woven web with random orientation of fibers and square, even selvage over a wide range of fibers and thicknesses of web, without cross lapping or laminating.

Today RANDO-FEEDERS and RANDO-WEBBERS are producing such products as window drapes, bath mats, cloths, dress goods, automotive fabrics and interlinings in many countries in the world.

WRITE today for details and latest Bulletin No. 104

TEXTILE DIVISION
CURLATOR®
CORPORATION
EAST ROCHESTER, NEW YORK

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Chrysler uses I·R·C's New Nylon

to make floor coverings and upholstery

WHY DOES CHRYSLER USE THE NEW NYLON IN THEIR IMPERIAL, CHRYSLER, DODGE AND PLYMOUTH CARS?

Because even a *small* percentage of The New Nylon, in automotive fabrics, gives wear advantages out of all proportion to the amount used. It means longer wear... it means greater crush resistance... it means less matting... it means higher abrasion resistance... based on comprehensive laboratory and practical test methods applicable to the automotive industry.

If you're making blends, or 100% nylon fabrics, look into the big advantages offered by The New Nylon Staple!

More Resiliency with less Crushability • Greater Strength
Better Luster • Better Crimp • Lower Dye Costs
Greater Resistance to Abrasion • New Economy

THE NEW Nylon Staple I·R·C

INDUSTRIAL RAYON CORPORATION

Sales Offices: 500 Fifth Avenue, New York 36, N. Y. • 627 Guilford Bldg., Greensboro, N. C.

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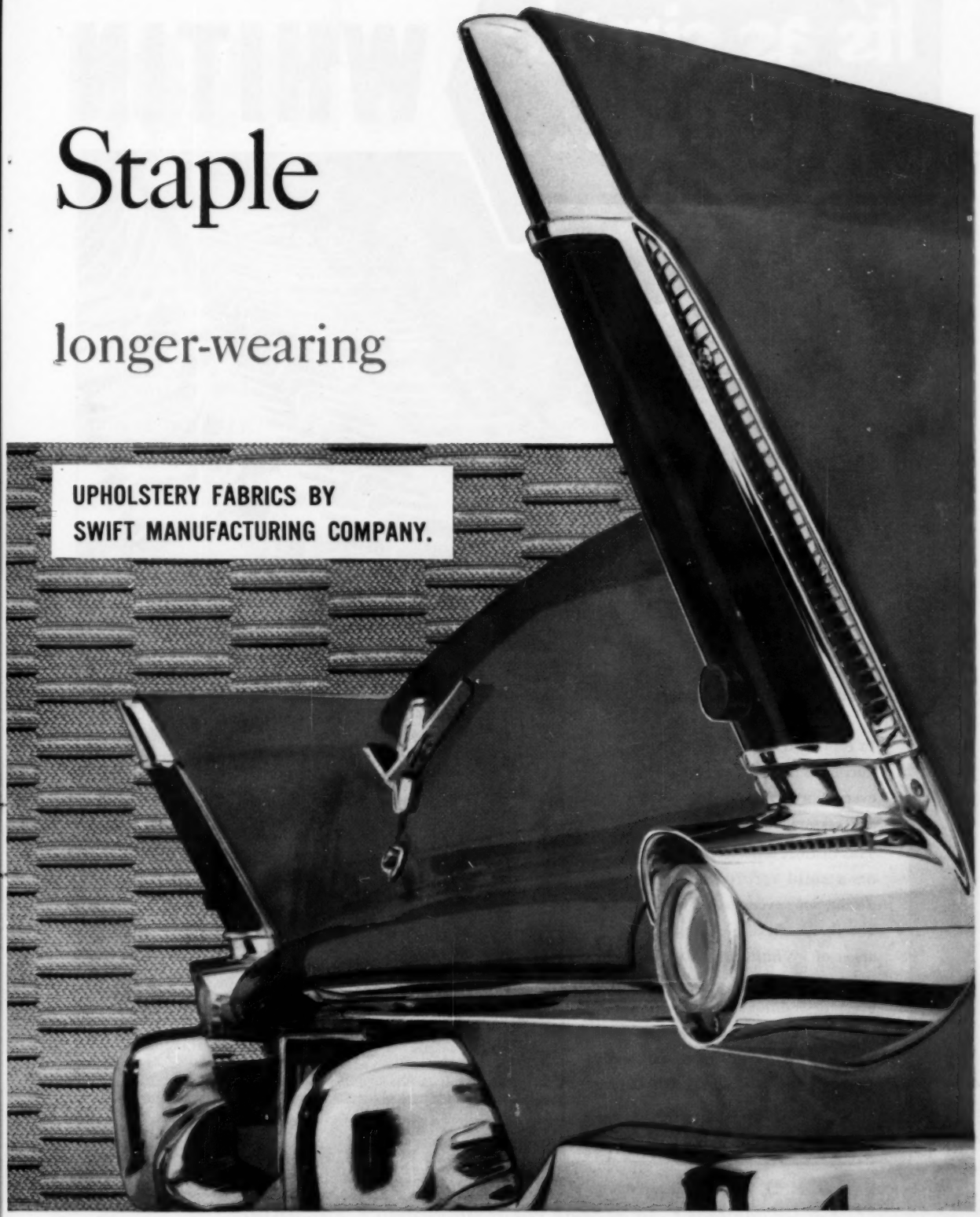
Staple

longer-wearing



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It's as simple as this... WHITIN

In top-flight quality mills, high production mills and specialty mills, on every fiber, Whitin Roving frames are acknowledged leaders.

This distinct mill preference is based on a solid record of unbeatable production, evenness of roving produced, the flexibility and performance of Whitin drafting systems. Advanced in design and having every desirable mechanical improvement, these frames have set new high standards of operation, with lowest costs per pound for direct labor, maintenance and total cost.

ROVING FRAMES

give you Better Roving at Lower Cost

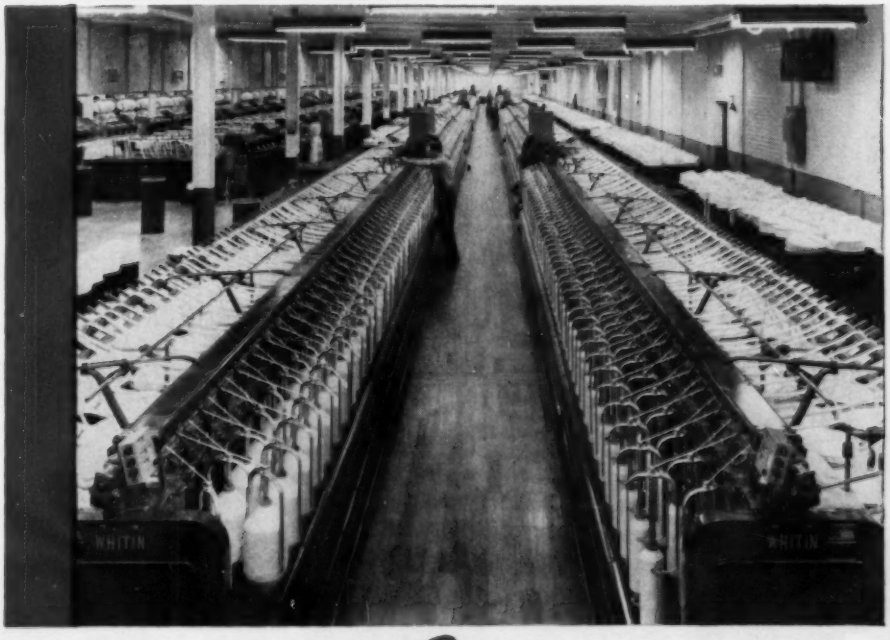
The data below is an example of the production and cost advantages you can secure with Whitin Roving frames. The figures are based on actual operating conditions in a mill producing 162,000 lbs. per 144 hr. week of 80x80, 39" 4.00 high quality print cloth with 31's warp and 41's filling.

	For 31's Warp	For 41's Filling
Hank Roving	1.00	1.30
Spindle R. P. M.	725	725
Front Roll Speed	178	139
T. Multiplier	1.15	1.30
% Efficiency	88	88
Lbs./Spdle./Hr.	1.10	.660
Lbs./Spdle./144 Hrs.	158.4	95.0
Size of Bobbin	12"x6½"	12"x6½"

	For 31's Warp	For 41's Filling
Wt./Sliver/Bobbin	54 oz.	54 oz.
Spindles per frame	96	96

Spindles Required	1279
Spindles, 14 frames used	1344
Fr./Operator	5-5-4

Cost per lb. for direct labor . . . $.00391



Photos courtesy of
DUNDEE MILLS, Incorporated
Griffin, Georgia

WHITIN MACHINE WORKS · FOR 125 YEARS · ONE COMPANY WITH ONE PURPOSE · SERVICE TO THE TEXTILE INDUSTRY · 1831–1956

For complete information, ask your Whitin representative — or write direct to us.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

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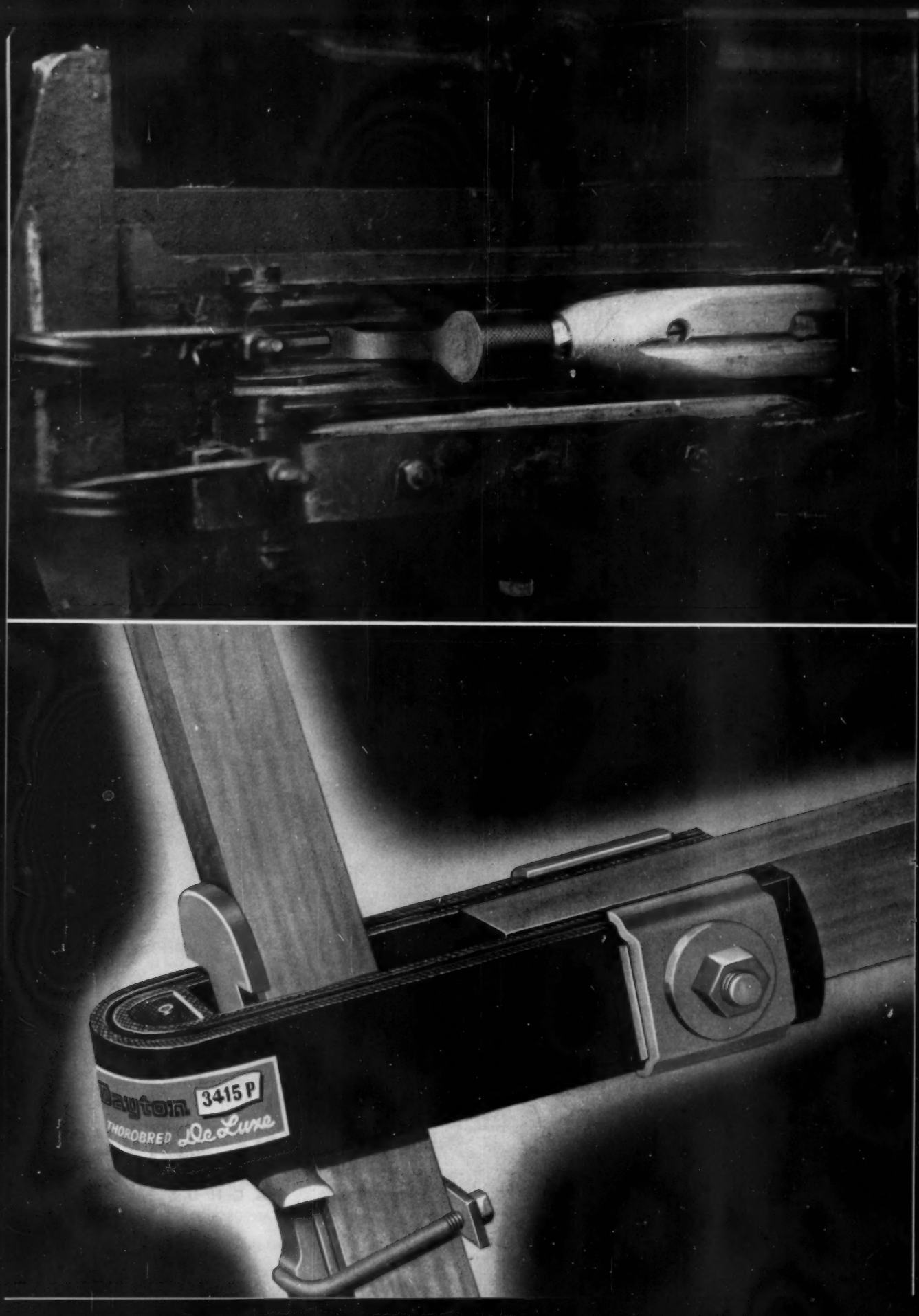

Dayton
3415 P
THOROBRED
DeLuxe

3 point density control . . .

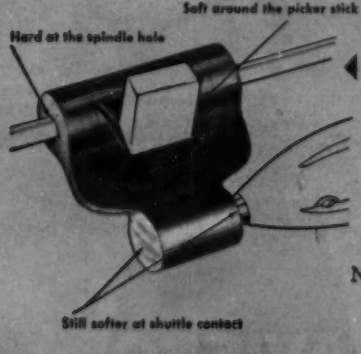
Protect vital loom parts
Reduce maintenance costs

with Dayton Thorobred | Drop Box Pickers Lug Straps

You're insuring the life of vital, expensive loom parts when you equip your looms with Dayton Drop Box Pickers. Cushioning action of shuttle-contact area protects shuttle points for millions of picker throws. Extra-resilient compound around picker hole absorbs tremendous shock of repeated shuttle contact, safeguards picker and connecting loom parts. Tough, durable composition in the spindle hole lasts longer, requires no lubrication.

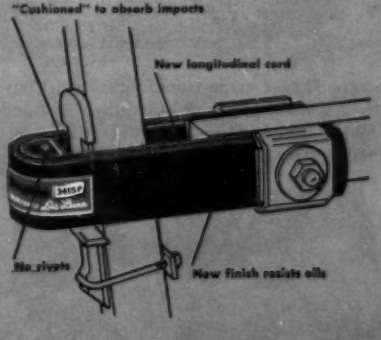
Key to protection of costly picker mechanism is the Dayton Thorobred Deluxe Lug Strap. Controlled elasticity in the molded-in plug cushions picker thrusts, safeguards loom parts. Newly designed, one piece construction assures longer service life, and special longitudinal cords guard against fatigue and permanent elongation. In actual tests against other types of lug straps Daytons gave 2 to 3 times the service life, better protection to looms.

For full information on how you can safeguard costly loom parts and reduce replacement costs with Dayton Thorobred Drop Box Pickers and Deluxe Lug Straps, contact your Dayton Representative or write Dayton Rubber Co., Textile Division, 401 S. Carolina National Bank Bldg., Greenville, S. C.



Thorobred Drop Box Picker
Absorbs loom shock,
protects loom parts!

Thorobred Deluxe Lug Strap
One piece construction!
No rivets or other parts to work loose!



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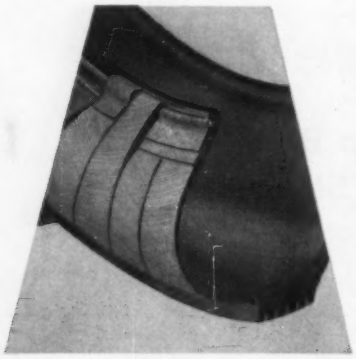
Dayton Rubber
51 YEARS OF PROGRESS

Dayco and Dayton Thorobred Products for Better Spinning and Weaving.

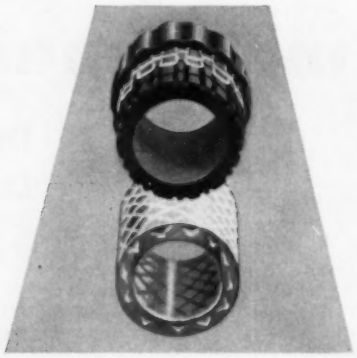
Wider range of high-strength yarns and fibers than any other brand

American Viscose Corporation, the nation's largest producer of rayon, manufactures a wider range of high-strength yarns and fibers than any other company.

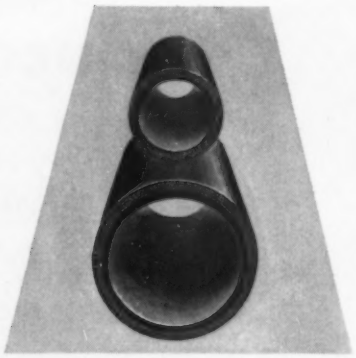
Here are a few of the hundreds of applications of AVISCO rayon that make industrial products stronger, more versatile, longer lasting:



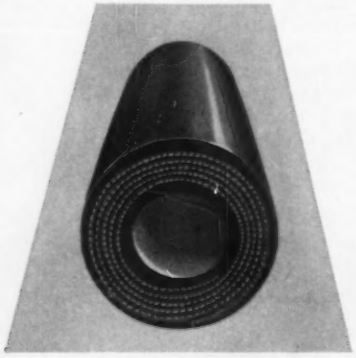
Rayon chafer fabric woven from continuous filament Rayflex yarn or high-strength Viscose 32-A staple yarns.



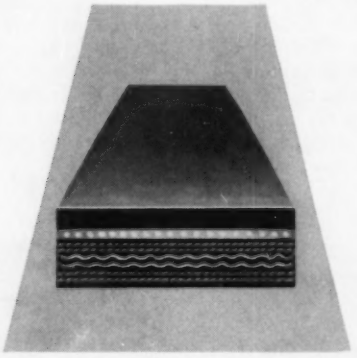
Garden hose—rubber or plastic—reinforced with either knit or braided rayon tire yarn for high strength, durability.



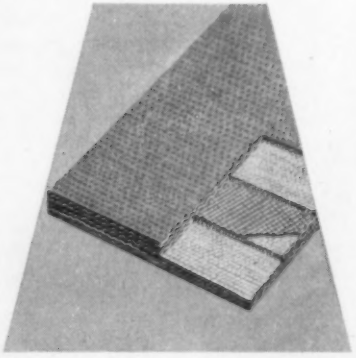
Automobile heater and radiator hose reinforced with knitted high-strength tire yarn.



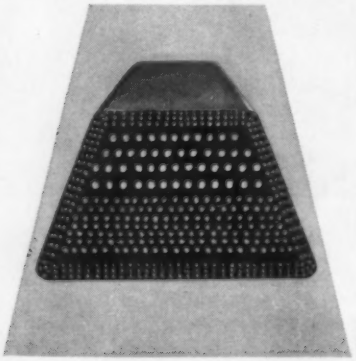
Spiral-wrapped hose made from fabric woven from Viscose 32-A high-strength staple. Wide range of uses wherever high bursting strength is required.



Conveyor belt reinforced with Super Rayflex rayon in cord or duck construction. Also made with fabric of Viscose 32-A high-strength rayon staple.



Heavy-duty power transmission belt with multiple plies of Super Rayflex for maximum strength and high operating efficiency.



V-belt, constructed of layers of tire fabric or individual cords.

We would be happy to discuss with you how you can use AVISCO rayon to strengthen your business.

American Viscose Corporation
350 Fifth Avenue
New York 1, N. Y.

AVISCO *is the trademark of American Viscose Corporation*

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100 YEARS

High-Quality CUTTERS (Models CA3)

in special models for wool, toweling, hosiery fabrics, silk, velvet, curtain materials and plush

NORTHERN U. S. AND CANADA:
TEXTILE MACHINERY IMPORT CO., 277 NORTH AVENUE, NEW ROCHELLE, N. Y.

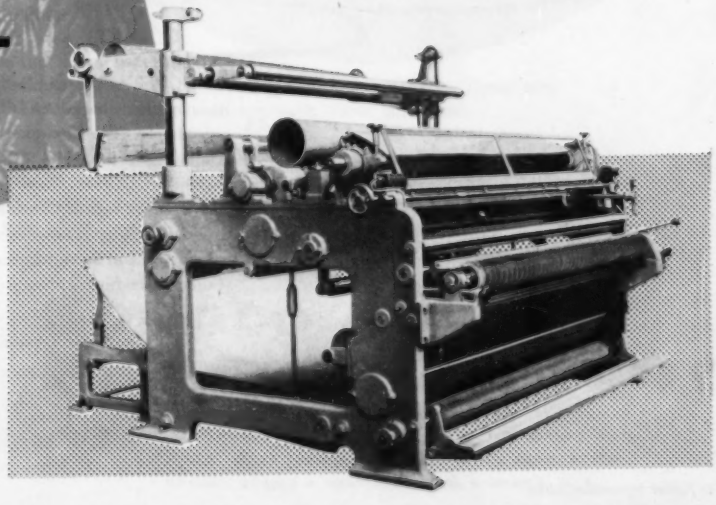
SOUTHERN U. S.:
PARROTT & BALLENTINE, 510 S. CAROLINA NATIONAL BANK BUILDING, GREENVILLE, S. C.

PRODUCTION PROGRAM:

Dept. 1
Finishing Machines for Woolens, Cotton, Synthetic Fiber, etc.

Dept. 2
Cutting & Finishing Machines for Corduroy, Velveteen, Suedes.

Dept. 3
Weaving Preparatory Machines, High Speed Cone Winder, Yarn Singeing Machines, High Speed Warping Machines



FRANZ MÜLLER • MASCHINENFABRIK • M. GLADBACH (RHEINLAND) GERMANY

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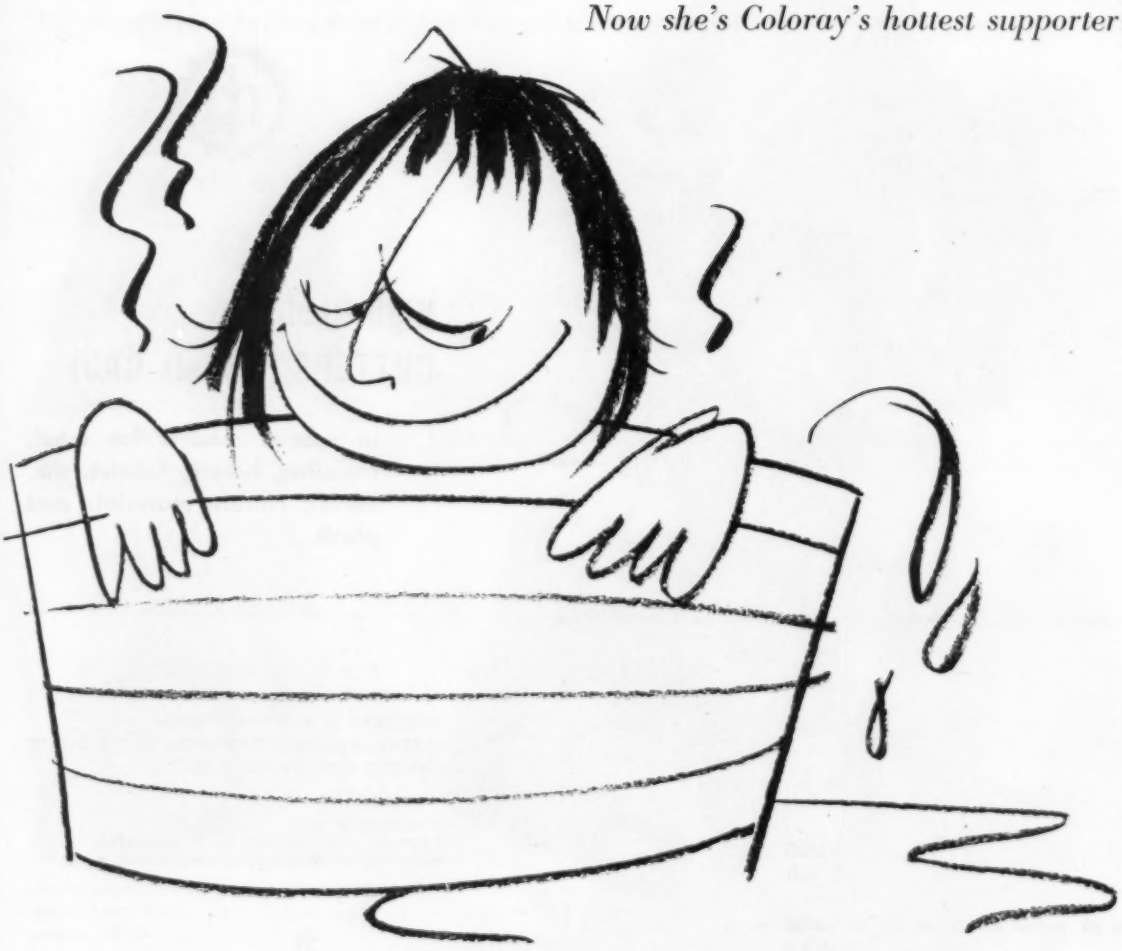
AD ON COLORAY WASHFASTNESS

There once was a retailer's daughter
Who fell in a tub of hot water
She emitted a shriek
But her dress didn't streak
*Now she's Coloray's hottest supporter!**



*SERIOUSLY—the washfastness of Courtaulds' Coloray rayon fiber is simply spectacular! Tests under AATCC procedures prove it. In laundries—in home washing machines—180° hot water and more—Coloray colors do not fade, streak or run. Do not stain the white wash. And Coloray washfastness, of course, is unaffected by finishes like shrink and crease resistance. There's *never* been a complaint about the washfastness of Courtaulds' solution-dyed fiber. Never in the 18 years of its existence! What a wonderful advantage Coloray colorfastness is for every kind of apparel and home furnishings. Make sure you feature merchandise made with Coloray, the fiber with caged-in color that *can't get out.*

Courtaulds' rayon fiber with Captive Color...*"can't escape!"*

COLORAY®

For further information, write:

COURTAULDS (ALABAMA) INC. • *First name in man-made fibers, first name in solution-dyeing*
600 FIFTH AVENUE, NEW YORK 20 • Greensboro, N. C. • Le Moyne Plant, Mobile, Ala.

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HERE'S WHY

Sonoco TUBES

WILL IMPROVE PRODUCTION and LOWER YOUR COSTS

All SONOCO textile tubes are made to meet your individual order and specific need. SONOCO research and product development have kept pace with today's modern, high-speed production methods. There are precision made tubes for all natural and synthetic yarns and cloth—for winding, twisting and other processes. SONOCO produces spiral, convolute, parallel and drawn tubes in sizes ⅛" to 36" I.D., in any length and wall thickness. Available in colors, various surfaces, treated, impregnated, perforated, scored, notched, printed and with crimped or burnished ends.

If you have a textile tube problem, consult with your SONOCO sales-engineer—or write us direct.

sonoco — PAPER CARRIERS — REG U.S. PAT OFF

SONOCO PRODUCTS COMPANY

MAIN OFFICE — HARTSVILLE, S. C.

MYSTIC, CONN. • AKRON, IND. • LOWELL, MASS. • PHILLIPSBURG, N. J.
LONGVIEW, TEXAS • PHILADELPHIA, PA. • LOS ANGELES, CAL.
GRANBY, QUEBEC • BRANTFORD, ONT. • MEXICO, D. F.

DEPENDABLE SOURCE OF SUPPLY

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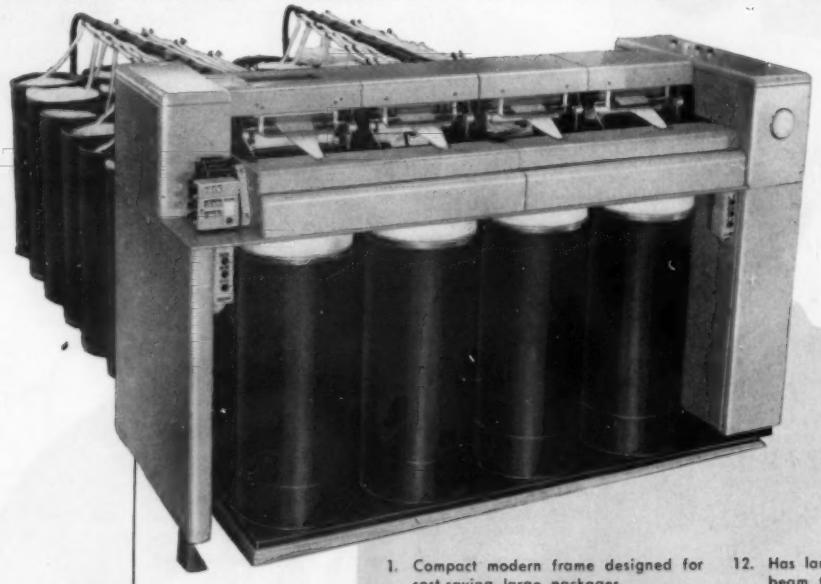
20 Good Reasons Why SACO-LOWELL'S New VERSAMATIC* DRAWING FRAME BELONGS IN YOUR MILL



Quality conscious, cost minded mills with a view to the stability of their future have already purchased more than 2000 deliveries.

1. Compact modern frame designed for cost-saving large packages.
2. Front Roll delivery of 250 to 300 feet per minute under average mill conditions.
3. The four deliveries constitute a complete unit permitting flexibility of arrangement and high operating efficiency.
4. Sliver regularity is equal to or better than that obtained from conventional frames operated at low speeds.
5. All rolls are driven independently.
6. Has patented automatic self-cleaning top and bottom clearers with built-in static conductors.
7. Electric top motions in five positions for better control with indicating lights for increased efficiency.
8. Regular mill runs show an efficiency up to 93%.
9. Individual motor drive is equipped with brake for quick stops.
10. Rigid unit construction of the all-steel chassis assures correct alignment and minimum maintenance.
11. Smooth exterior contours reduce waste, fly accumulation and minimize cleaning.
12. Has large jack shaft under the roller beam to transmit power to the foot-end gearing.
13. Large diameter roll and intermediate gears prevent chatter, provide simple and easy adjustments and facilitate proper meshing.
14. Anti-friction bearings throughout the frame.
15. Lifting rolls and creels for 6 or 8 ends up.
16. Advanced design over arm spring weighting which guarantees accurate pressure.
17. Proven Shaw principle drafting elements can be 3 Over 4 or 4 Over 5.
18. Anti-friction tube gears with new long life high speed drive, eliminating all oiling.
19. Advanced design turntables eliminate lifting at the doffing operation.
20. Gives highest production of quality sliver by every standard — per delivery — per man hour — per square foot of floor space — per horsepower.

For further information and demonstration call your nearest Saco-Lowell office.

***VERSAMATIC DEFINED**

VERSAtile . . . adaptable to all fibres, both synthetic and natural, from ¾" to 3".

autoMATIC . . . in all ways except for creeling and doffing.

SACO-LOWELL
60 BATTERYMARCH STREET, BOSTON 10, MASS.
Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.
SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

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AMERICA'S LEADING SYNTHETIC DETERGENT

Smart "clock-watchers" made

Nacconol® SL

the largest selling liquid detergent in the textile industry*

Time and money conscious mills know you can save handling time and costs too with Nacconol SL. Being a liquid concentrate, it is easy and clean to handle *and* requires no dissolving. Simply add water to secure the desired working concentration.

And remember—you get more cleaning-power-per-dollar with Nacconol SL (based on an active ingredient basis compared with most dry products).

Why not join the mills that are cutting production costs with Nacconol SL?

Other popular forms of Nacconol for wet processing include Nacconol DB, Nacconol NR and Nacconol NRSF.

* Alkyl Aryl Sulfonate

Nacconol

NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION

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Akron, Ohio, First Federal Savings Bldg. BLackstone 3-9324
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Chattanooga 2, Tenn., 1303 James Bldg. Chattanooga 6-4347
Atlanta, Ga., 1714 Spring St., N. W. TRinity 6-4308
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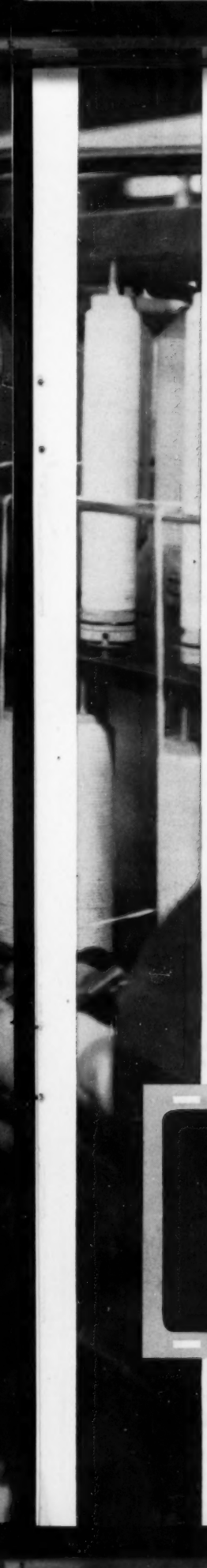
Toronto 2, Can., 137-143 Wellington St. W. Empire 4-6495

Send for your Sample



WHY ACCOTEX APRONS GIVE LONG, TROUBLE-FREE SPINNING

Many special Armstrong tests help develop longer-lasting aprons. Here's the story of one that literally tears rubber apart.

To make sure that Accotex® Aprons have more than enough strength, toughness, and tear resistance for today's high-draft spinning, Armstrong textile engineers subject a sample of every mill batch of synthetic rubber to a special tear test.

The photographs below—taken with a high-speed camera—show how this test works. A synthetic rubber sample is gripped between the jaws of a special test machine and then torn apart. The machine automatically measures and records the tensile force needed to stretch the rubber beyond its elastic limit.

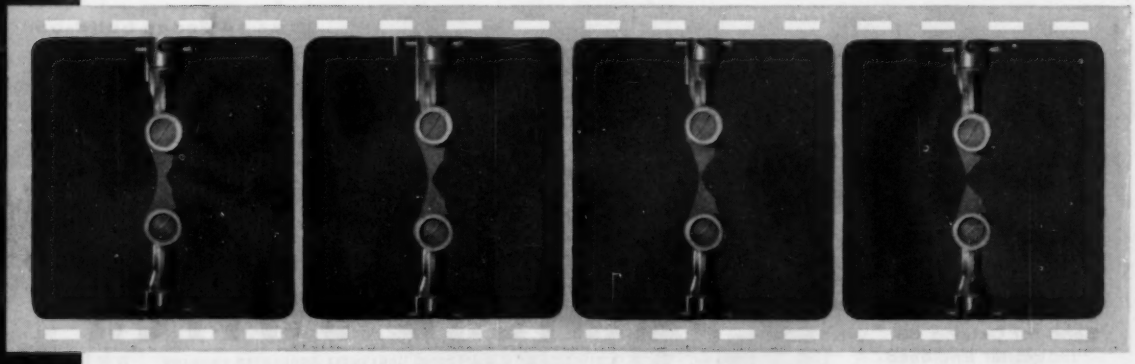
This tear test is used in conjunction with many other research techniques aimed at developing Accotex Aprons with just the right frictional properties, flexibility, and resistance to oils, solvents, and ozone. And all these tests go far beyond conditions likely to be encountered on your frames. This specialized research—matched by the most advanced production facilities—is your assurance that Accotex Aprons will spin top-quality yarn year after year.

No matter what type of equipment you're using, no matter what kind of fiber or blend you're spinning, there's an Accotex Apron specifically engineered for your needs. If you're not already using Accotex Aprons, ask your Armstrong representative to arrange for a test frame next time he calls. You'll see in a short time how they can improve your yarn quality.

Write today for your copy of the new booklet, "Armstrong Textile Roll Coverings and Mill Supplies." It gives information on Accotex Aprons for both single- and double-apron frames—plus facts on other Armstrong textile supplies. Armstrong Cork Company, Industrial Division, 6410 Dauphin St., Lancaster, Pa.

Armstrong ACCOTEX APRONS

. . . used wherever performance counts



PHOTOGRAPHS TAKEN AT INTERVALS OF 1/1000 OF A SECOND show how special tear tester pulls apart synthetic rubber samples. Machine automatically measures and records tensile force necessary to tear rubber, helps Armstrong engineers develop stronger aprons for all types of long-draft frames.

MICRO precision switches

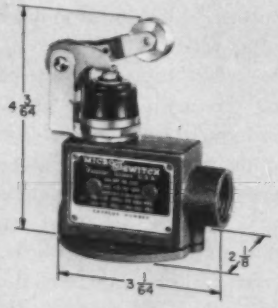
...THEIR USE IS A PRINCIPLE OF GOOD DESIGN

H HONEYWELL

Increase production and provide safety by installing MICRO SWITCH precision switches

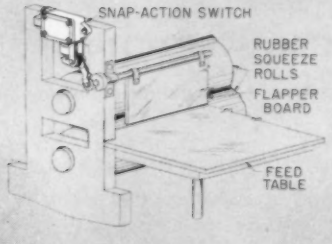
• Textile plant operating men have found MICRO SWITCH precision switches, installed at strategic points, give automatic operation and increased production from existing equipment. It is an easy, quick and economical way to boost plant capacity on a modest budget.

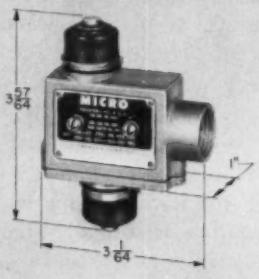
These ideas illustrate how MICRO SWITCH products are being used to make equipment operate more efficiently:



Protects operator's hand in carpet-wringing operation

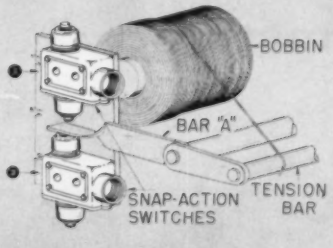
Roller-arm actuated switch is operated by cam to shut off rolls in case baffleboard is pushed forward. Carpet is positioned in the nip of the rolls by hand but machine will not operate until hands are withdrawn. Roller arm is field adjustable through 360° horizontally and 225° vertically. Elastomer boot protects switching unit against effect of liquids, dust or other foreign substances.





Keeps proper yarn tension for knitting operation

Two enclosed maintained-contact switches are used to prevent breakage of yarn due to either too high or too low tension. In either case, Bar A contacts one switch or the other and shuts off the machine. This switch is designed for applications which require sustained contact after the actuating force has been released. A re-set plunger enables the switch to be re-set for succeeding operations.



For complete information on switches for textile equipment, contact the MICRO SWITCH *distributor nearest you. Field engineering service is also available at* MICRO SWITCH *branch offices. Look under "Switches, Electric" in the Yellow Pages.*

How MICRO Precision Switches are used to increase textile production

as trumpet stops on combing heads
•
as carriage movement controls
•
to prevent needle breakage
•
to stop bobbin winding when bobbin fills
•
to automatically eject unfilled quills
•
to stop motor when gear box is opened
•
to control position of pressure roll on warper
•
to control tension on cloth measuring machine
•
as thread breakage detectors
•
to control cloth position as web unrolls
•
to position clamps on cloth stretching machine
•
as thread run out detector on loom shuttles
•
as selvedge build-up control
•
as fabric thickness detectors
•
and many other textile applications

Send for Catalog 83 "Industrial Enclosed Switches"

MICRO SWITCH

A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

In Canada, Leaside, Toronto 17, Ontario • FREEPORT, ILLINOIS

H HONEYWELL

Am I ready for a Towmotor?

You are, if your present handling operation is *not* fully mechanized, and requires: **1.** *3 or more full-time workmen.* **2.** *Movement of heavy or bulky unit loads.*

In today's competitive market, you must step up your business operations with efficient handling methods. To discover how *your* firm can speed handling, eliminate "bottlenecks" in the flow of materials, and make maximum use of storage space, call your Towmotor representative today. He'll show you how to cut handling costs and open the door to *greater profit*. Write for certified Job Studies covering your industry. TOWMOTOR CORP., Div. 2210, 1226 E. 152nd St., Cleveland 10, Ohio.

America's ***best engineered*** *fork lift truck*

TOWMOTOR
THE ONE-MAN-GANG ®

Read how a company in the Weaving Industry cut handling costs 50%. Ask for Job Study #117

THERE'S ONLY ONE FORK LIFT TRUCK CALLED TOWMOTOR

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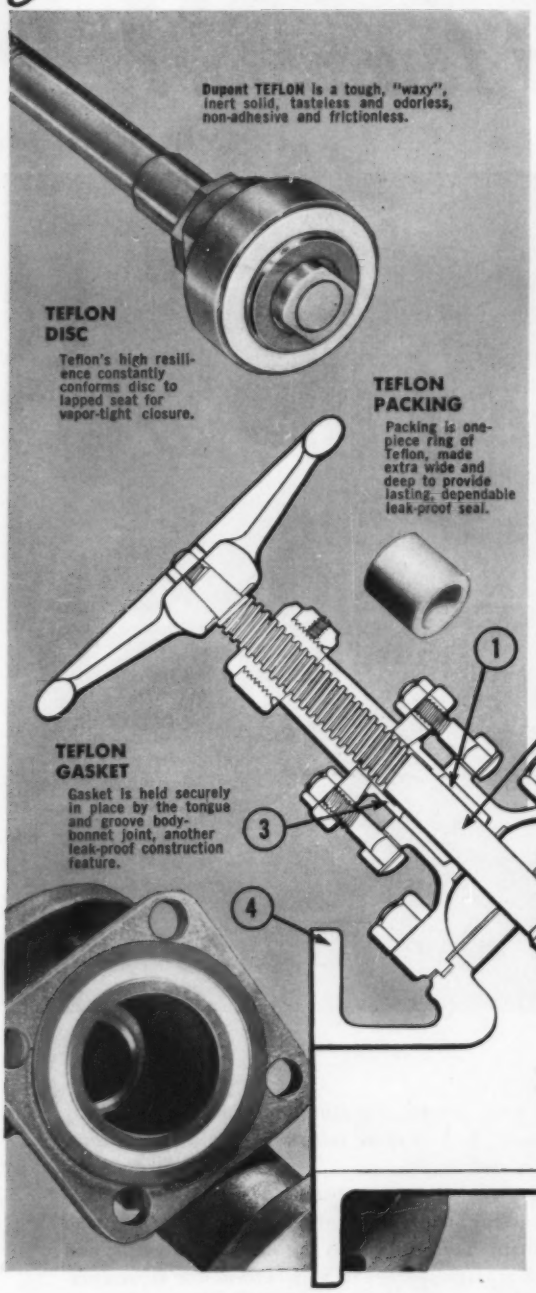
Jenkins designed for trouble-free performance... a

STAINLESS STEEL "Y"
to lower costs in a wider range of
CORROSIVE SERVICES

For food and chemcial plants, and similar services, Jenkins Fig. 1335 "Y" Globe offers many advanced features that will lower operating costs and keep your processing lines trouble-free. The disc, packing, and gasket are tough, resilient Teflon. Tasteless and odorless, it eliminates problems of contamination.

The "Y" pattern permits full flow, nearly equal to that of a gate valve, and also provides the vapor-tight closure and the ease of disc renewal of a globe valve.

Fig. 1335 offers extra value by any test . . . *initial cost, operating efficiency, low maintenance.* You can convert this extra value into *extra savings* on your toughest corrosive services. Call your Jenkins Distributor, or write: Jenkins Bros., 100 Park Ave., New York 17.


Dupont TEFLON is a tough, "waxy", inert solid, tasteless and odorless, non-adhesive and frictionless.
TEFLON DISC
Teflon's high resilience constantly conforms disc to lapped seat for vapor-tight closure.
TEFLON PACKING
Packing is one-piece ring of Teflon, made extra wide and deep to provide lasting, dependable leak-proof seal.
TEFLON GASKET
Gasket is held securely in place by the tongue and groove body-bonnet joint, another leak-proof construction feature.
1
2
3
4

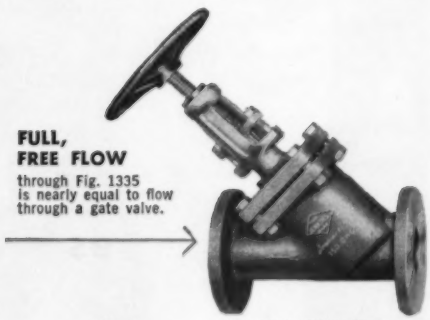


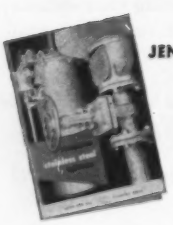
Fig. 1335 "Y" GLOBE
150 lbs. O.W.G. at 500°F
230 lbs. O.W.G. at 100°F
Sizes 1" to 4"

(1) **Packing Box**—Exceptionally deep and wide to hold optimum size packing.

(2) **Spindle**—Polished shank, long-operating threads, bevel shoulder for backseating.

(3) **Gland**—Two-piece for equalized pressure, tight seal.

(4) **Flanges**—Conform to M.S.S. Standard Practice S.P.42 Specifications.



JENKINS STAINLESS STEEL VALVE BOOKLET illustrates and describes wide range of Jenkins Globe, Gate, Check, and Y Valves, includes selection data, survey forms. Ask for Form 200-A.

JENKINS VALVES

LOOK FOR THE JENKINS DIAMOND

SINCE 1864 TRADE JENKINS MARK

Jenkins Bros.

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"GULFSPIN keeps our spindles spinning clean and free"

*says T. F. Snipes, Overseer of Spinning of this prominent southern mill**

"WE have used Gulfspin for almost three years and have found that our 34,000 spindles stay clean with practically no sticking," says Mr. Snipes. "Also Gulfspin doesn't thicken after long usage."

In addition to the benefits mentioned above, Gulfspin provides effective protection against rust—and it reduces power costs because of its ability to maintain its original viscosity after many months of service.

You'll find that the use of Gulfspin will contribute to smoother spindle operation, fewer ends down, and rock-bottom maintenance and power costs.

Contact a Gulf Sales Engineer and let him demonstrate Gulfspin's superiority on your frames. Consult the telephone directory for the number of your local Gulf office. Visit the Gulf Booth—No. 211—at the Southern Textile Exhibition, Greenville, South Carolina.

**Name furnished upon request.*

GULF

GULF OIL CORPORATION • GULF REFINING COMPANY

1822 Gulf Building, Pittsburgh 30, Pa.

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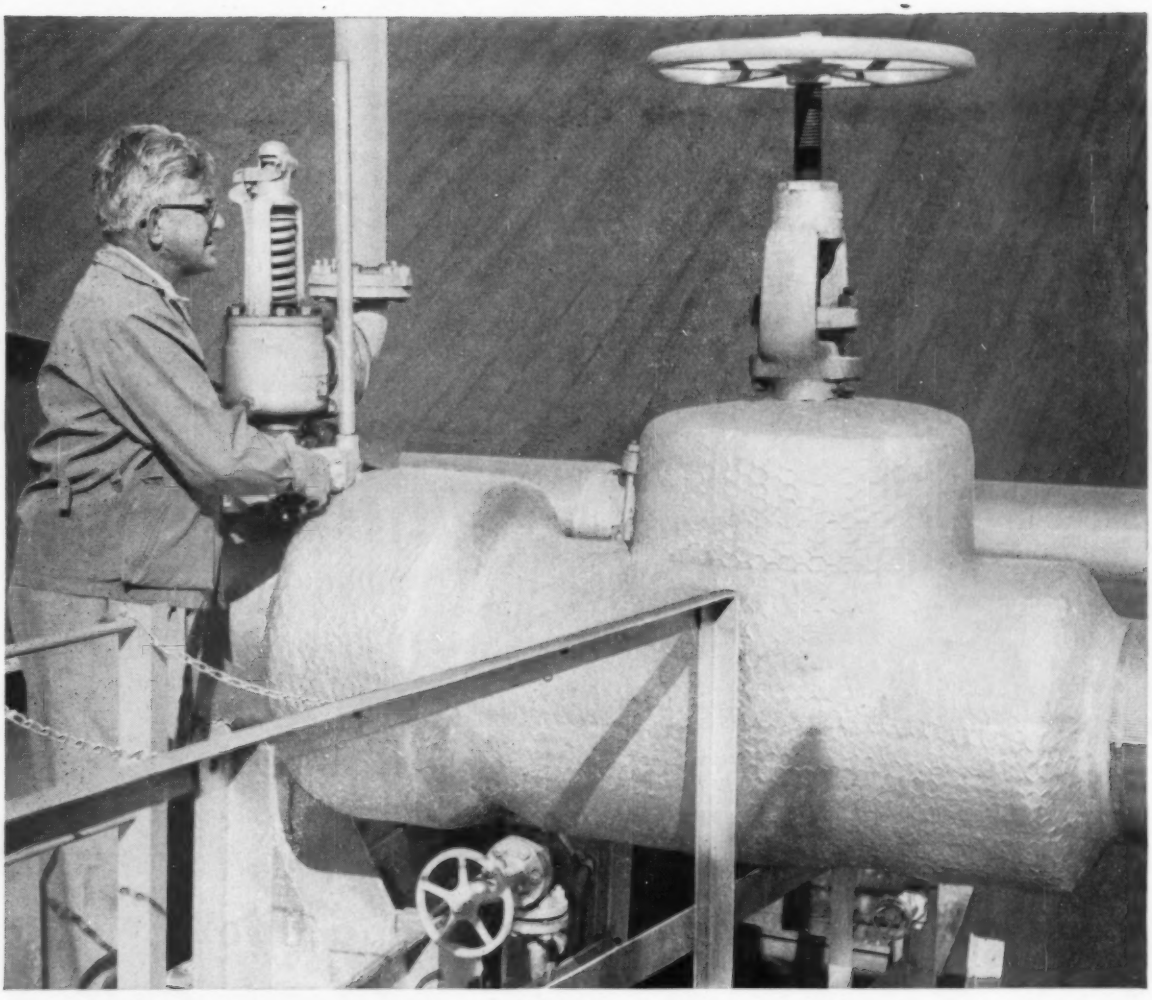


This Crane valve has 20-year cost-free record on 400 psi. steam at 750° F.

Twenty years on this high-temperature steam boiler outlet service with never a wrench on it—that's valve performance in any man's language.

This Crane 8-inch No. 179U cast steel stop-check valve has racked up just such a record at Fort Bend Utilities Co., Sugar Land, Texas, and is working as smoothly today as it did two decades ago.

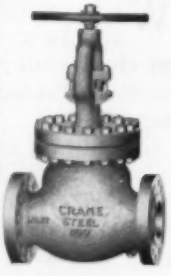
The Fort Bend Utilities plant—a subsidiary of the neighboring Imperial Sugar Co.—finds this Crane stop-check an important aid to boiler efficiency.

Its high-lift disc permits maximum flow-through, with minimum pressure drop under varying load conditions. Seating is instantaneous on back flow.

On manual closure, about once yearly for boiler servicing, the valve has never failed to respond smoothly and seat tightly.

To valve users experienced with Crane quality, this performance record is not so unusual. Thousands of Crane stop-checks throughout industry are giving similarly outstanding service.

The superior materials, the top-flight engineering and construction designed into all Crane valves give them service capacity and durability second to none.



Get these advantages next time you order valves: specify Crane and be *certain* of the valve service you want. Consult your local Crane Representative or write to address below.

CRANE VALVES & FITTINGS

PIPE • KITCHENS • PLUMBING • HEATING

Since 1855—Crane Co., General Offices: Chicago 5, Ill. Branches and Wholesalers Serving All Areas

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WON'T MARK FINE FABRICS

This take-up roll covering combines smoothness and high friction

Armstrong NO-732 Take-Up Roll Covering reduces fabric marking because it provides a unique combination of smoothness and high friction.

The finely textured surface of NO-732 is smooth enough to handle even the finest loom-finished fabrics safely . . . and yet this synthetic rubber compound has up to twice the surface friction you'd normally expect of a rubber material. This high friction provides steady take-up tension from selvage to selvage, which practically eliminates any chance of wrinkling. And NO-732 Covering will give you years of dependable service.

NO-732 is backed with sturdy fabric for extra strength and good adhesion to the roll. It's easy to apply, too. It comes in lengths of 60, 100, or 150 feet, in handy ribbon form. Uniform thickness is .083 inch. Standard width is 2 inches; other widths are available on request.

Your Armstrong man will be glad to show you samples of NO-732 and help set up a test in your plant. For more information on NO-732, and other weave room items, send for our new folder, "Armstrong Loom Supplies." Write Armstrong Cork Company, Industrial Division, 6910 Dauphin Street, Lancaster, Pennsylvania.

Armstrong LOOM SUPPLIES

. . . used wherever performance counts

LOOM CLUTCH DISCS AND INSERTS • PRESS ROLL COVERINGS • LOOM BRAKE AND LET-OFF STRIPS • TEMPLE ROLL COVERINGS

Which is Your Problem?

High Speed Slasher Control System

▼ ▼ ▼

PH Control

▼ ▼ ▼

Dye Padder Control

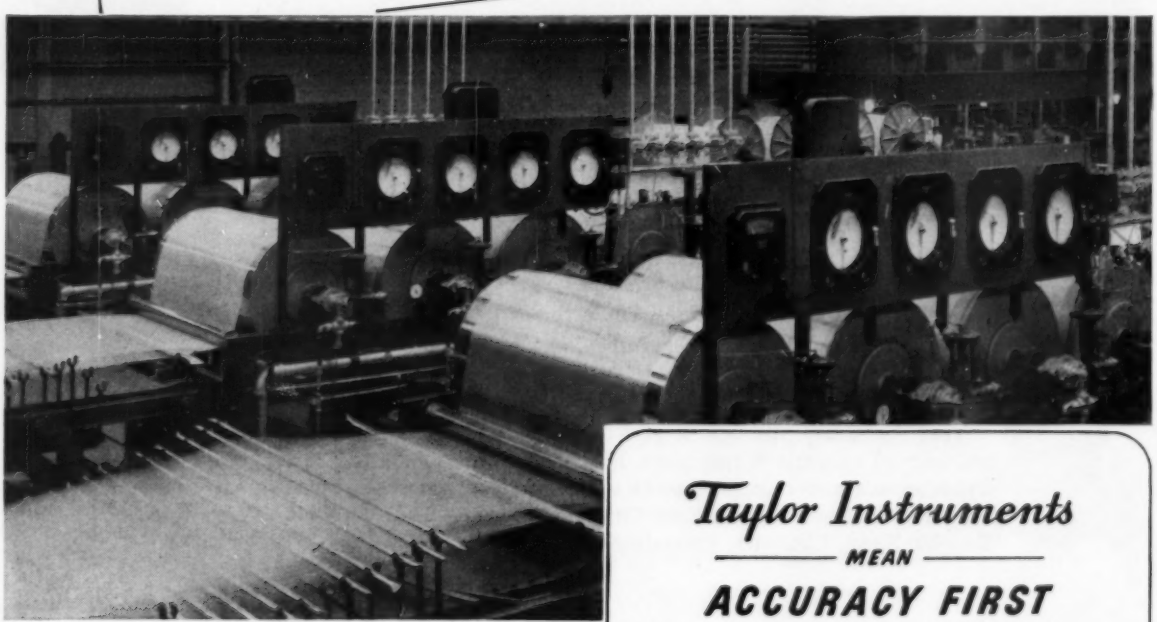
▼ ▼ ▼

YOU'LL FIND THE ANSWER AT THE SOUTHERN TEXTILE SHOW

THESE control systems will be demonstrated by animation at the Taylor Booth. We hope you'll come and see them, but if you're not planning to be in Greenville, just call your Taylor Field Engineer—or write direct to Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

* * *

Pictured below is a Taylor High Speed Slasher Control System. Moisture content of the yarn—from the lightest filaments to the heaviest spuns—is controlled by regulating surface drying temperature of the cylinders. The most accurate yet devised, this system gives you quick, automatic start-up (reduces heat-up time as much as 75%) and accurate control regardless of operating temperature, thanks to the Taylor method of air injection.



Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

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A POWERFUL STRIPPING AID

for vat, sulfur, direct and developed colors

PEREGAL® ST

Peregal ST is THE assistant to use for stripping cotton or rayon yarns, piece goods, raw stock and prints.

Peregal ST forms extremely stable cation-anion complexes with dyestuffs containing sulfo or phenolate groups in aqueous solution. The bond of attraction between these dyes and Peregal ST is so strong that the affinity of the dislodged dye in the stripping bath is permanently shifted away from dyestuff-on-cellulose to dyestuff on Peregal.

In general, Peregal ST can be considered a "liquid fiber" for which dyestuffs have even greater affinity than for cotton or rayon.

Write today for complete technical data on this highly effective and economical stripping aid.

From Research to Reality

ANTARA® CHEMICALS

A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION

435 HUDSON STREET · NEW YORK 14, NEW YORK

SALES OFFICES: New York · Boston · Providence · Philadelphia · Charlotte · Chattanooga · Chicago
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ANTARA gaf

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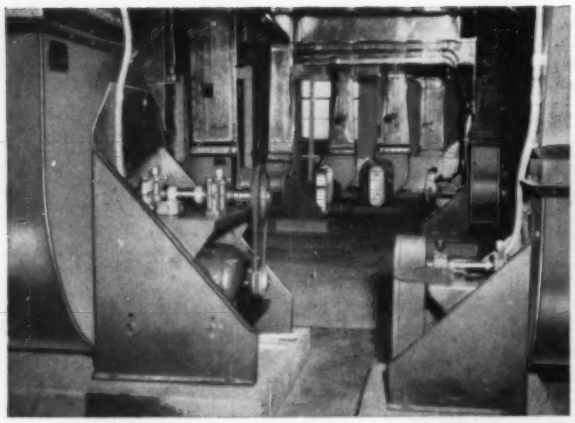
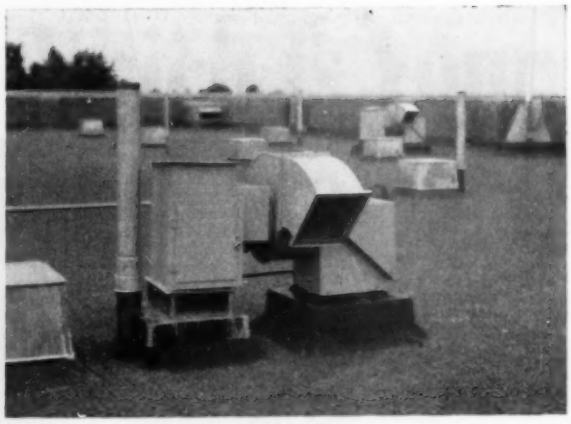


INDOORS — VENTILATION OF ZONES OR WHOLE BUILDINGS

Compact "Buffalo" Belted Vent Sets are easily installed singly or in groups (as above) for varying volume requirements, or for different zones — and new fans can be easily added as ventilation requirements increase.



OUTDOORS — VENTILATION THAT DOESN'T USE FLOOR SPACE

Furnished with all-weather drive, husky Belted Vent Sets are ideal for roof or other outdoor installations. Range of capacities is 500 cfm to 20,000 cfm in this line of extremely quiet, efficient ventilating fans.

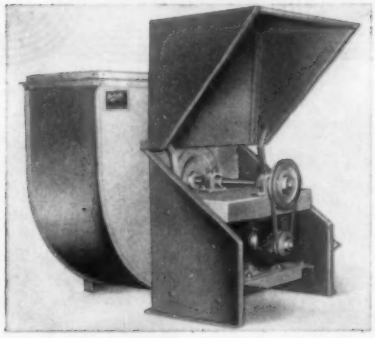
FAN FLEXIBILITY...

TO SIMPLIFY YOUR JOB PLANNING

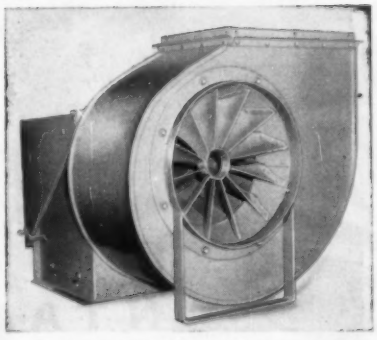
"Buffalo"

BELTED VENT SETS

Whether you're planning a large or small air moving job, these fans will fit right into your plans. Installation can be indoors or outdoors, and their light weight and compact size simplifies the job. You can get large capacity at small-fan cost with multiple-fan installations — for complete flexibility of operation. And when you put "Buffalo" Belted Vent Sets into the plan, you give your customers "Q" Factor performance — built-in Quality that means long life and satisfaction. *Write for new Bulletin 3720A* and data on new model Belted Vent Sets now being used for small induced draft applications.



ADJUSTABLE MOTOR MOUNT permits easy change of pulleys and belts for capacity changes after installation.



HIGH PERFORMANCE is built into "Buffalo" Belted Vent Sets. Note inlet guide vanes which reduce noise and stabilize performance.

"Buffalo"

BUFFALO FORGE COMPANY

184 MORTIMER ST. BUFFALO, N. Y.

PUBLISHERS OF "FAN ENGINEERING" HANDBOOK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

Sales Representatives in all Principal Cities

VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING FORCED DRAFT COOLING HEATING PRESSURE BLOWING

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Sandoz vats set standards for fast colors in materials that differ

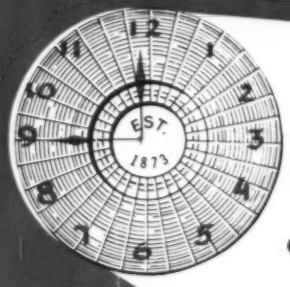
Wherever fast color counts – in prints, awning stripes, ginghams, broadcloth – you can count on Sandoz. Sandothrene Ultrasperse Vat dyestuffs give you fine, even dispersions in dyeing and printing. Ample evidence of their superiority is available. Ask to see our chromatographic test discs. These prove how uniformly Sandoz vat dyes penetrate the mass of fibers without forming agglomerates. For vats or vat printing pastes, the complete Sandoz package brings you the finest quality dyes . . . related basic research . . . expert application counsel. Call us today. SANDOZ CHEMICAL WORKS, INC., 61-63 Van Dam Street, New York 13, N. Y. ALgonquin 5-1700.

SANDOZ

THINKS AHEAD WITH TEXTILES

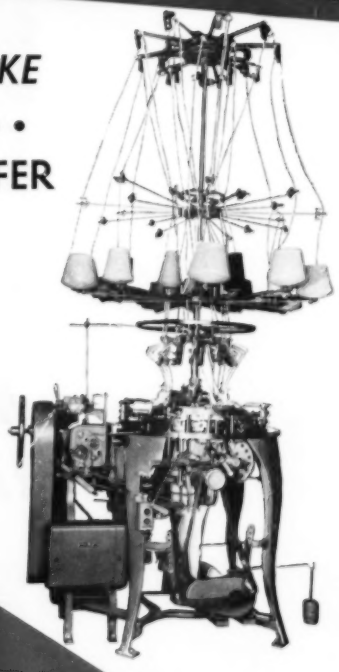
SANDOZ

IT'S TIME --- *to go* LEIGHTON !

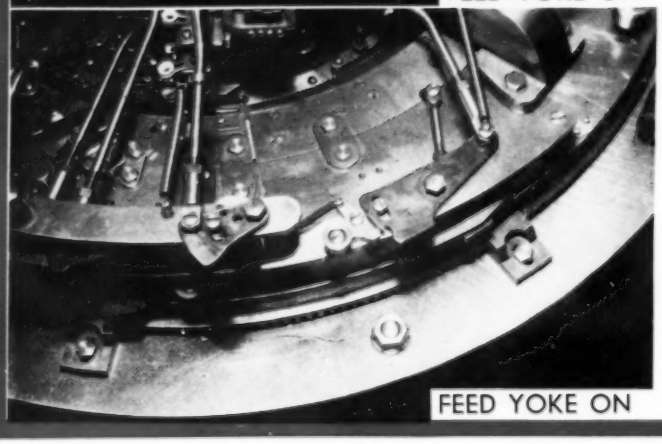


NEW FEED YOKE DESIGN • • on . . LEIGHTON TRANSFER MACHINES

offers you HOURLY PRODUCTION because of FASTER MAINTENANCE.



FEED YOKE OFF



FEED YOKE ON

FEED-YOKE REMOVED IN MINUTES

LEIGHTON'S development for the Rapid Removal of Feed-Yoke, simplifies maintenance and reduces the machine "break-down" time. Merely remove hold-down screws, one cotter pin; & the entire Feed-Yoke can be lifted away as a complete unit. This gives machine operator a clear view of dial cam sections & cylinder cam sections for easy adjustment.

ANOTHER LEIGHTON FEATURE

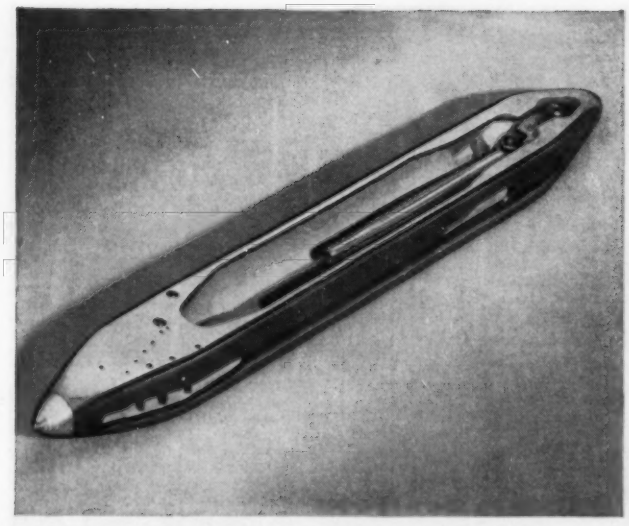
LEIGHTON CIRCULAR KNITTING MACHINES will easily handle Coarse or Light weight yarns including new Ban-lon and Orlon.

Write today for further details and free estimates.

LEIGHTON MACHINE COMPANY

• • • MANCHESTER, NEW HAMPSHIRE • • •

MFGRS. OF CIRCULAR LATCH NEEDLE KNITTING MACHINES

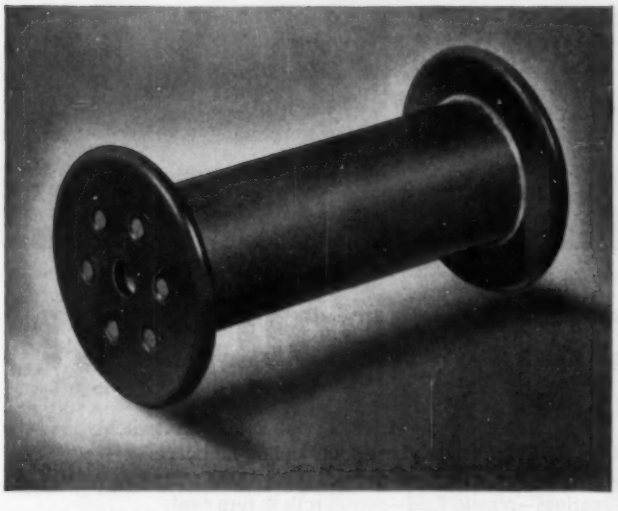


For Shuttles...

use Taylor Shuttle Fibre. It's strong, durable, highly resistant to abrasion. It wears smoothly and slowly . . . won't cut to rough spots that could snag yarn. Only half the weight of aluminum; machines readily, bonds easily. For many special wearing applications, choose Taylor Grade L and Grade CEF laminates—superior in physical and wearing qualities, easily bonded to wood.

Build for performance

...*with* TAYLOR MATERIALS



For Bobbins...

choose Taylor Bobbin Fibre or Grade LLL laminate for bobbin heads, as required by the application. These materials have high impact strength, smooth finish, excellent wear resistance . . . are economical to machine and punch. For bobbin spools, use the smoothness, high strength and stability of Taylor Grade XX laminated plastic tubing. It's non-bleeding in steaming or setting operations; comes in O.D. from 3/16" to 20".

TAYLOR has specialized for years in supplying materials for Textile equipment manufacturers . . . does not make any finished products for the mill. A complete range of vulcanized fibre and laminated plastics in sheet, tube and rod form, is available for use in shuttles, sizing bobbins, spinning bobbins, package tubes, bearing blocks, cam followers and tote boxes. Taylor specialists will be glad to discuss your applications, to help you select and apply the most effective and most economical grade for specific requirements.

For performance and value, it pays to specify Taylor materials in Textile equipment, and in the mill.

TAYLOR FIBRE CO.

Plants at Norristown, Pa.—La Verne, Calif.

TAYLOR

Laminated Plastics
Vulcanized Fibre

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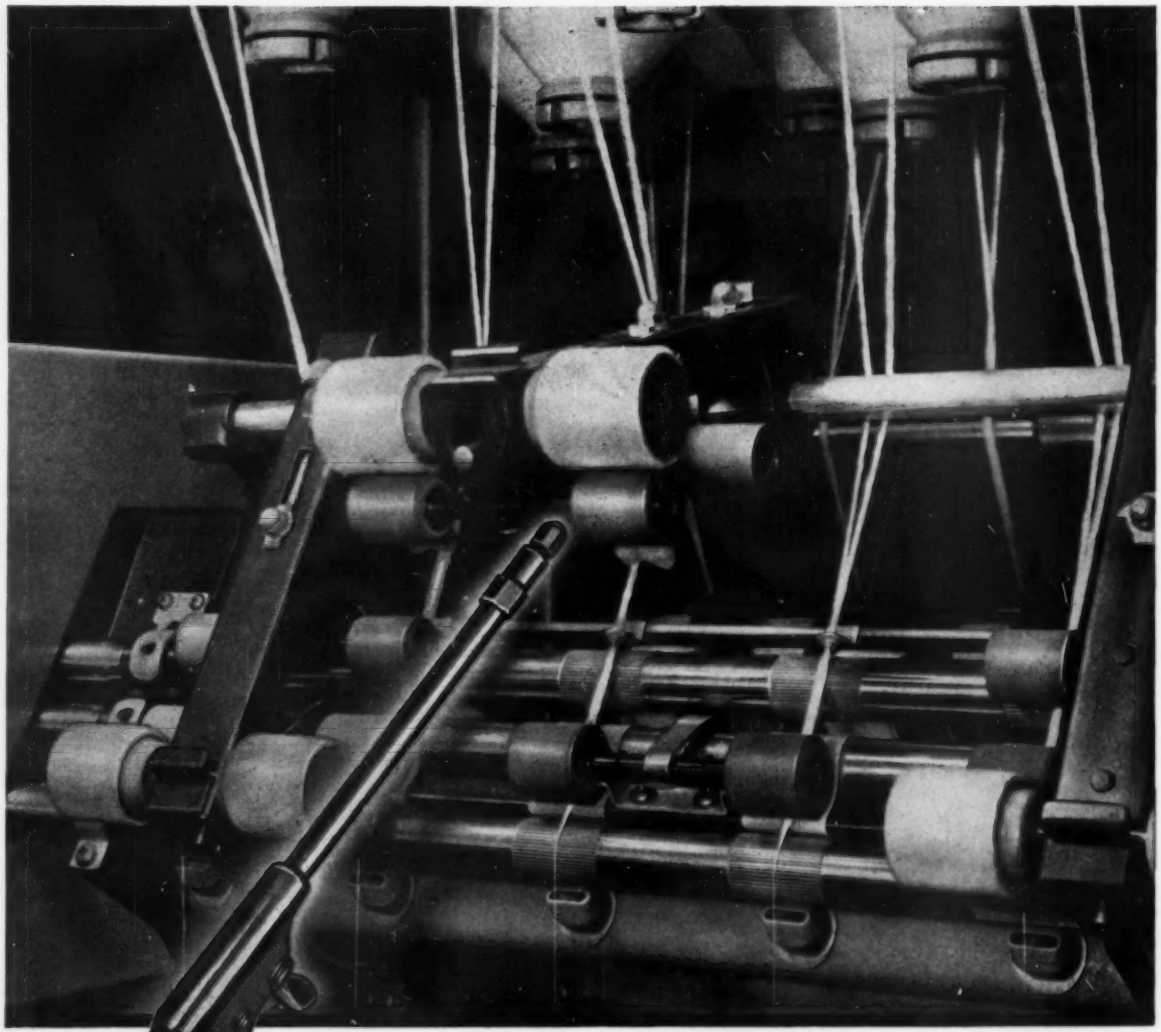

END DRIP SPOILAGE!

Protect your yarn and roll coverings from needless spoilage... switch to Sinclair NO-DRIP lubrication! These outstanding lubricants give complete bearing protection, yet stay put. They won't creep or throw out of bearings—remain fluid—permit rolls to turn easily and smoothly.

Sinclair NO-DRIP Numbers 8, 12, 15 and 17 can save you money through smooth operation and low maintenance costs. Call your Sinclair Representative today, or write for the new NO-DRIP pamphlet to Sinclair Refining Company, Technical Service Division, 600 Fifth Avenue, New York 20, N. Y. *There's no obligation.*

SINCLAIR

NO-DRIP TEXTILE LUBRICANTS

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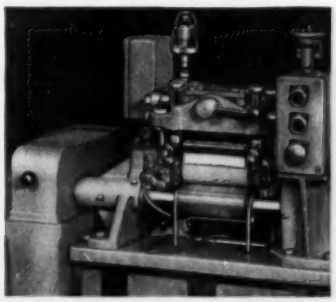
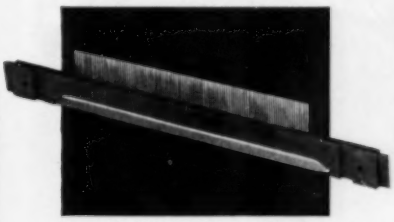
Only Warner & Swasey Pin Drafters® give you all these exclusive cost-cutting features

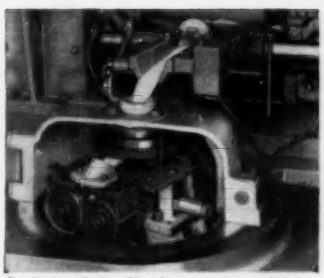
- INCREASED PRODUCTION
- IMPROVED QUALITY CONTROL
- REDUCED MAINTENANCE COSTS



Lap Detector Stop Motion prevents lapping that could result in both damaged parts and unproductive downtime. Also, it gives more even sliver delivery.



Long-life Plastic-Bonded Faller Bars cut maintenance costs and provide improved quality control.



Exclusive Coiler Heads rotate on sealed-for-life ball bearings that protect from flange wear, and give more even coiling in cans.

Quad Delivery Pin Drafters used for intermediate and finishing operations.

WARNER & SWASEY'S new, high-speed Pin Drafters are the accepted standard of progressive textile manufacturers throughout the industry. Used for the French, Bradford and American systems, in addition to dye house operations, they are busy rolling up impressive profit records on wool, synthetics and blends.

Several of the Pin Drafter's outstanding engineering features, which have made it an acknowledged contribution to the industry, are:

Plastic-Bonded Faller Bars that give the resiliency and low maintenance costs required for today's high-speed operation. Their accurately-set flat pins provide better drafting qualities and finer parallelization, with increased inter-fiber friction. Precise control is assured from tip to base, allowing more space-per-inch for stock to pass. They permit greater input load and 1,500 faller drops per minute.

Lap Detector Stop Motions which are located at the delivery. They quickly stop the machine before laps form or build up on either drafting or pressure rolls. This prevents damage to equipment and guarantees an even stock delivery. Lap Detectors are now available for all Warner & Swasey Pin Drafters, regardless of their age.

Chain-Driven Coiler Head that creates a slight tension on the stock passing through, assisting in the positive control from nip roll to package. Ceramic guides are used on all parts subjected to abrasive action by stock. Working parts are lint-free. All bearings are sealed for life-time operation.

For the complete story on how Pin Drafters can cut costs, speed production, and improve product quality in your mill, call in your Warner & Swasey Field Representative.

®Reg. U. S. Pat. Off.

SALES OFFICES

Main Office and Factory:
5701 Carnegie Avenue, Cleveland 3, Ohio
61 Rivulet Street, North Uxbridge, Mass.
Suburban Square Bldg., Ardmore (Phila.), Pa.
121 11th Street, N. E., Atlanta 3, Georgia
624 Pecan Avenue, Charlotte 1, N. C.

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS ... WITH A WARNER & SWASEY

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You get

Totally NEW FABRIC EFFECTS

. . . plus *Shrinkproofing*

with the unique

RIGGS & LOMBARD COMPACTING MACHINE

Now you can command an extraordinary range of special effects — through new compacting methods which enhance the basic structure of goods in unprecedented fashion and *at the same time* shrinkproofs to commercial standards or better.

The R & L compacting machine, particularly designed to practice the new methods, excitingly transforms woven and non-woven fabrics and yarns of many types by mechanical methods — no chemicals! Nubby fabrics look nubbier, patterned weaves are accentuated with depth dimension added . . . and, after these mere beginnings, possibilities for further developments are practically unlimited. Yarns come up much loftier, for use in new and superior yarn-dyed fabrics.

This compacting machine handles a wide range of weights and types from very light to heavy fabrics such as carpeting, and a variety of yarn counts consisting of any fiber or blend. Reasonable in cost, and needing minimum floor space, it can be synchronized for in-line production at relatively high speeds. Replaces sponging process before tailoring on wool, worsted, blended fabrics — also achieves fine felting effects on worsteds and synthetic fabrics.

Riggs & Lombard collaborated in development of this machine for practicing the new compacting methods on woven and non-woven fabrics and yarns of many types. Now we are sole manufacturers and distributors of this machine in these fields, under licenses from the originators, Fabric Research Laboratories, Inc. Write for complete data. Find out how we helped engineer this new machine — and can engineer an installation that will assure *you* of immediately profitable new fabric effects.

RIGGS & LOMBARD, INC.

Foot of Suffolk Street, Lowell, Mass.

Agents: Paul A. Merriam Company, P. O. Box 86, Providence, R. I., Albert R. Breen, 80 E. Jackson Blvd., Chicago 4, Ill., Larry T. Nelson, 2824 S. W. Montgomery Drive, Portland, Ore., F. W. Warrington Co., 611 Johnston Bldg., Charlotte, N. C., A. Harold Zayotti, Jr., P. O. Box 125, Riverton, N. J., H. E. Mott Co., Limited, Brantford, Ontario, Canada.

Samples For Free Testing

We can arrange for test run on yarns or fabrics to show shrink-proofing and extraordinary new effects — or to have a representative call to show profit potential in your operation. Just write or phone — no obligation.

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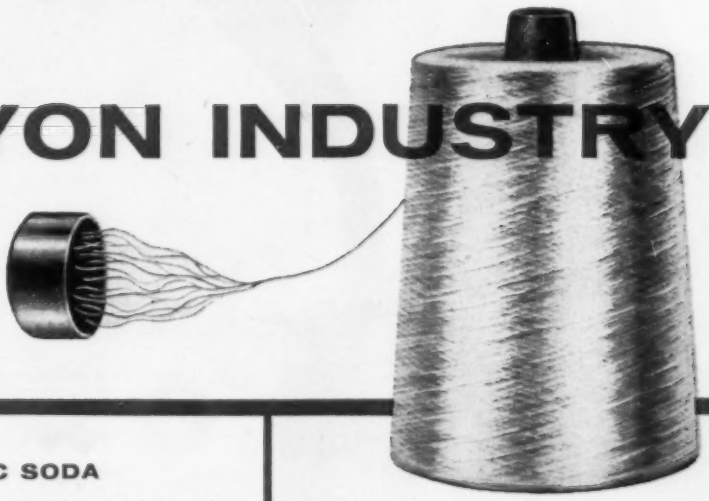
SOLVAY® CHEMICALS FOR THE RAYON INDUSTRY



CAUSTIC SODA

STEEPING OF PULP—Removal of hemicellulose and other impurities from the pulp.

DISSOLVING—Dissolving of Xanthated cellulose.

BLEACHING—Preparation of sodium hypochlorite for bleaching.

WATER SOFTENING—Precipitating hardness salts from water.

MINIMIZING AIR POLLUTION—Scrubbing ventilating air effluent to remove sulphur compounds.

SODA ASH

BLEACHING—Preparing sodium hypochlorite for bleaching.

WATER SOFTENING—Precipitating hardness salts.

HYDROGEN PEROXIDE

BLEACHING—Brightening the rayon yarn.

ORTHODICHLOROBENZENE

REDUCING ODOR POLLUTION—Injecting into ventilating air to reduce pollution.

SODIUM BICARBONATE

pH ADJUSTING—Adjusting pH of sodium hypochlorite for bleaching.

AMERICA'S FIRST PRODUCER OF ALKALIES
SOLVAY
75th YEAR
1881-1956

SOLVAY PROCESS DIVISION

Allied Chemical

ALLIED CHEMICAL & DYE CORPORATION
61 Broadway, New York 6, N. Y.

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What is the name

that's known in metallic yarns?

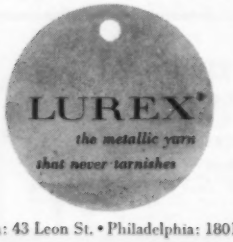
Why do consumers recognize Lurex® instantly?
Because Lurex has been nationally advertised in leading publications for more than a decade.

What makes retailers eager to promote Lurex?
The very name of Lurex makes news. Lurex attracts store traffic. Lurex sells merchandise.

Why are leading designers associated with Lurex?
Lurex is the *creative* metallic yarn, a vital source for important new ideas and new color effects.

What stimulates mills to develop new fabrics with Lurex?
Lurex has established itself as the smooth-running metallic yarn that produces more profitable fabrics.

Why does industrial management keep an eye on Lurex?
Lurex is known as an outstanding stimulant for new end-uses . . . enlarging the potential area of profit.



***This tag tells you it's* LUREX**
the leader . . . the non-tarnishing metallic yarn made only by
The Dobeckmun Company,
Cleveland 1, Ohio · New York: 350 Fifth Avenue · London · Amsterdam

Boston: 43 Leon St. • Philadelphia: 1801 W. Cheltenham Ave. • Charlotte, N. C.: 221 S. Church St. • Chicago: 330 Wells St. • Detroit: 2970 W. Grand Boulevard

Stainless is used extensively in the backwasher shown at left, and the scouring machine below, both manufactured by C. G. Sargent's Sons Corporation, Graniteville, Mass.

HOW

stainless

HELPS PRODUCE
BETTER YARNS
AT LOWER COST

Here are some of the reasons why *stainless* is the best friend the textile mill ever had:

Resists Corrosion — Lasts Longer — Stainless just about never wears out—and its smooth, rust-free surface resists the corrosive bite of most chemicals used in textile manufacture. The backwasher and scouring train illustrated, for example, use stainless wherever liquors or chemicals come in touch with metal. Their manufacturer says, "The caustics and acids used, particularly in scouring heavy grease wools, are pretty strong stuff—few other metals would stand up under such exacting conditions."

Stainless Babies Fibres — Stainless presents a smooth, non-snagging surface to stock in transit through dryers —especially important with cashmere and other soft, tender fibers. And stainless is just as vital for parts such as teeth and rakes in openers and pickers. "For stainless helps do a more thorough preparatory job without damage to fibers—makes for better, easier, far more economical production of first quality yarns." And, of course, stainless is about the easiest material to keep clean that you can find.

There's a lot more to the story of how stainless means greater efficiency—greater profits in the textile mill. Much of it is contained in Crucible's 32-page booklet, "Making the Most of Stainless Steels in the Textile Industry." Write for your free copy today.

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

Canadian Distributor — Railway & Power Engineering Corp., Ltd.

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New York City . . . where Dow caustic works for chemical manufacturers.

DOW

wherever you're producing

DEPENDABLE CAUSTIC SODA RESEARCH IS ASSURED FROM DOW

Dow is the one producer, you know, supplying caustic soda to industry everywhere. Wherever you produce, you're *sure* of getting rapid, dependable service from Dow.

Continual Dow *research* on processing that involves caustic now . . . or will years from now . . . develops ways for you to do it better, faster, at decreased cost. This creatively practical planning helps you to improved, more uniform products to sell profitably in new markets.

Then, too—there's multiplant production, flexible delivery network, prompt field technical service. Does Dow have *your* order? THE DOW CHEMICAL COMPANY, Dpt. AL 751E-1, Midland, Michigan.

you can depend on DOW CHEMICALS DOW

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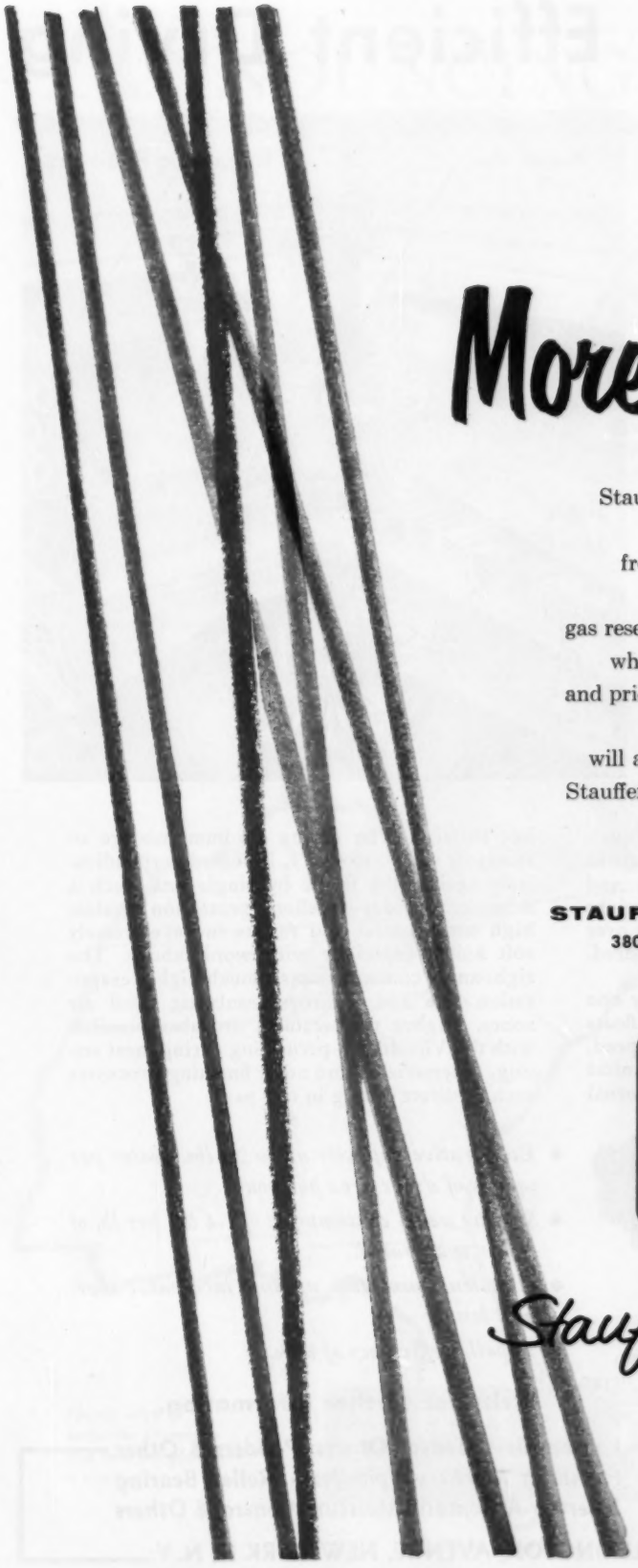

More CARBON BISULFIDE!

Stauffer's new plant at Le Moyne, Alabama, is now producing carbon bisulfide from natural gas and sulfur.

The location in an area of enormous gas reserves provides a supply of raw materials which will tend to eliminate the instability and price fluctuations of the wood charcoal market.

The huge capacity of the new plant will assure continuance of the service for which Stauffer has long been known in the Rayon industry.

Purity meets Stauffer Standards.

STAUFFER CHEMICAL COMPANY
380 Madison Avenue, New York 17, N. Y.
Telephone: OXford 7-0600

Stauffer CHEMICALS SINCE 1885

Stauffer means service

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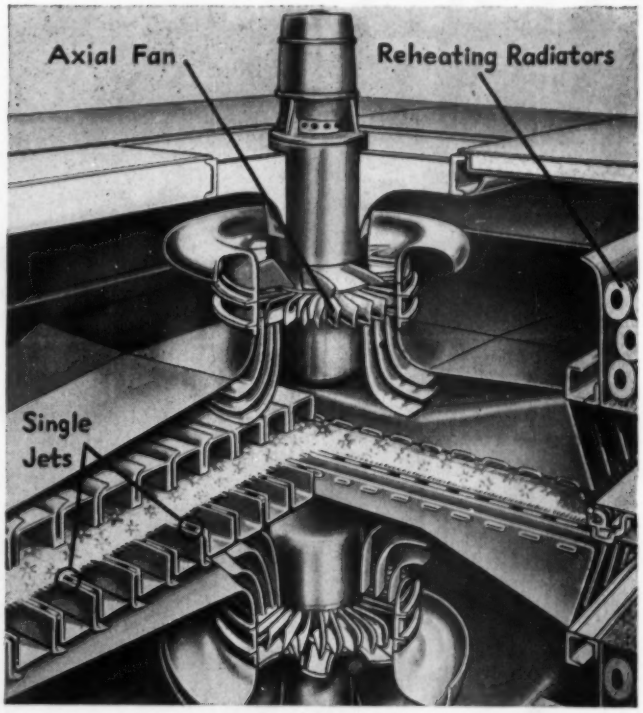
Faster, More Efficient Drying

Now Possible with

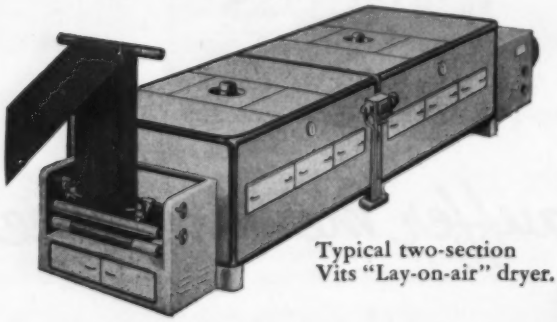
VITS

"Lay-on-air" System



A revolutionary design in aerodynamic construction, the Vits single pass, forced convection, "Lay-on-air" system has achieved maximum possible efficiency in the high speed drying of all fabrics. In addition to this combination of speed and efficiency the Vits design provides an internal drying "focus" so well balanced that even the most sensitive fabrics are dried quickly without distortion or mutilation. Direct results to you are increased production and greatly improved quality—balanced by an equally important decrease in specific steam and power consumption and necessary floor space. Ordinary dress weight fabrics, for example, can be run at speeds over 100 yards per minute, or much higher if desired.

In operation the fabric is fed and held by one pair of rollers at each end of the dryer, and floats free and tensionless between two, high speed, balanced blower systems. There is no mechanical suspension, no injurious contact with internal hot surfaces. The drying medium mixture of steam-air at 300 to 400°F. is vented perpendicularly against the fabric by single jets. Such a mixture provides excellent protection against high temperatures and results in an extremely soft finish, especially with wool fabrics. The right-angle contact creates a much higher evaporation rate and destroys insulating dead air zones. Higher temperatures are also possible with the Vits dryer—permitting curing, heat setting, polymerizing and other finishing processes such as direct dyeing in one pass.



Typical two-section Vits "Lay-on-air" dryer.

- *Evaporative capacity up to 90 lbs. water per sq. yd. of dryer area per hour.*
- *Specific steam consumption of 1.4 lbs. per lb. of water evaporated.*
- *Excellent insulation against incidental thermal loss.*
- *Impeller efficiency of 88%.*

Write for further information.

COSA TEXTILE DIVISION

Lay-on-air & Tenter Dryers, Padders & Other Finishing Mach. · Spindles · Roller Bearing Inserts · Automatic Moisture Control & Others

COSA CORPORATION, 405 LEXINGTON AVENUE, NEW YORK 17, N. Y.

← For more data, write this page number on Reader-Service card.

ANNOUNCING...

The Tennessee Corporation, miners of Sulfur Bearing Ores, announces another Basic Sulfur Textile Chemical, **T C HYDRO** for the Southern textile industry.

SODIUM HYDROSULFITE

T C HYDRO

TENNESSEE CORPORATION

CONCENTRATED

SERVICE

Located in the heart of the Southern textile industry, we are in a position to give over-night truckload service to most Southern textile plants. Small lots available from centrally located warehouses.

DEPENDABILITY

Long a trusted source of Sulfuric Acid, Sulfur Dioxide, Organic Sulfonates and other textile chemicals, we are utilizing our know-how and basic position in sulfur chemistry to produce another quality product for the textile industry.

QUALITY

T-C HYDRO is a dry, white, free flowing, crystalline powder of uniform size and structure. It is dust free assuring higher stability and uniformity.

Phone, wire or write for literature and test samples if desired.

TENNESSEE TC CORPORATION

TENNESSEE CORPORATION

617-629 Grant Building, Atlanta, Georgia

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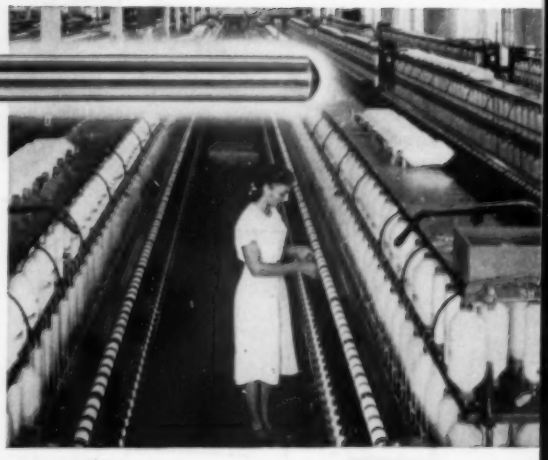

PROTECTION AT 10,000 RPM. There's no place for eccentric tubing or non-uniform wall thickness in textile mill spindles that must turn at 10,000 rpm. That's why they are made from Republic ELECTRUNITE Steel Tubing. Uniform wall thickness and concentricity are assured by the way ELECTRUNITE Tubing is made. Carefully rolled flat steel is inspected on both sides. Then formed into a cylindrical shape that's electric-resistance welded for uniform strength. The result: Uniform tubes in every dimension, every contour. Send coupon for more facts.

REPUBLIC

REPUBLIC STEEL

World's Widest Range of Standard Steels

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The metal that protects the most delicate colors and fabrics

ENDURO

Stainless Steel

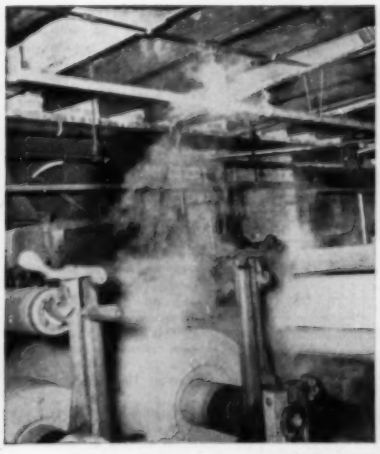
There's no need to worry about color contamination when you use equipment made from Republic ENDURO Stainless Steel. It's the metal that's safe for the most delicate colors and fabrics.

ENDURO is non-contaminating. It does not react with dye bath chemicals or peroxide bleaches. It stubbornly resists rust and corrosion, eliminating the danger of off-colors caused by metallic oxides. A water rinse quickly restores ENDURO surfaces to sparkling cleanliness and permits fast color changeovers.

ENDURO is solid stainless steel all the way through. There are no applied surfaces to crack, chip, peel or flake—never any danger of snagging sheer fabrics. Even at high temperatures, ENDURO resists scaling.

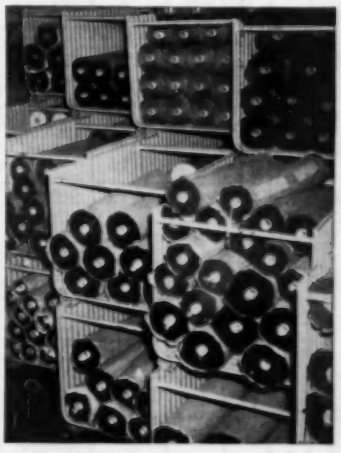
Any slightly higher initial cost of ENDURO equipment is more than offset by years of maintenance-free service.

These are only a few reasons for using ENDURO equipment. Your supplier will give you others about the metal that protects, that cuts costs, that lasts and lasts—Republic ENDURO Stainless Steel. Or write us for more information.



DOUBLE PROTECTION AGAINST STEAM AND FUMES for electrical circuits is provided by the tough, polyethylene coating over the galvanized finish of Republic Dekoron-Coated Electrical Metallic Tubing. Raceways are protected from end to end. Installation is easy. Moisture-tight joints are made, using threadless connectors and couplings. Joints are sealed with vinyl or plastic tape. Dekoron-Coated E.M.T., made by Republic's Steel and Tubes Division, reduces replacement costs. Cuts down-time of costly equipment. Booklet DEK-1 has all the facts. Write for it.

PROTECTION IN STORAGE AND REDUCED HANDLING COSTS are the results of the special units developed by Republic's Pressed Steel Division for a dye company. "In the gray" bolts of cloth are received from customers, then dyed, bleached or printed and stored for indefinite periods. Small amounts are parceled out as the customers request them. The problem of handling, transporting and storing the cloth is greatly reduced with Republic's special unit. Open-end construction permits easy access to cloth. Offset channels under unit permit tiering. Four-way entry permits easy handling in restricted spaces. Want more facts? Mail the coupon.



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and Steel Products

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Please send more information on:
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over 8,000 Different Cylinder SELECTIONS—

Miller AIR AND HYDRAULIC CYLINDERS AND BOOSTERS "IN STOCK" for immediate delivery...

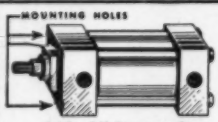
See Miller Bulletins A-105K (Air) and H-104K (Hydraulic) for Complete Dimensions and Engineering Data on these "in-stock" sizes and other Custom Miller Cylinders in bores up to 20" and strokes up to 22 feet.

"IN-STOCK" MODELS

"A" Signifies Miller 200 psi Air Cylinders; "H", 2000 psi Hydraulic Cylinders. Interchangeable Mountings Are Shown In Red On Drawings.

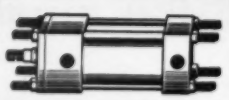
A61 and H61
Flange Mounting on Rod End
(A61 not available in 8" bore)

A62 and H62
Flange Mounting on Cap End
(A62 not available in 8" bore)

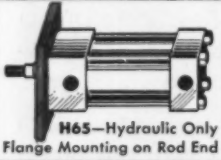


A63—8" Bore only
Flange Mounting on Rod End

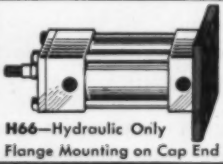
A64—8" Bore only
Flange Mounting on Cap End



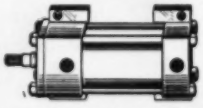
A50 & H50—Tie Rods not extended beyond nuts.
A51 & H51—Tie Rods extended both ends (shown).
A52 & H52—Tie Rods extended. Cap End only.
A53 & H53—Tie Rods Extended. Rod End only.
A54 & H54—Two Tie Rods extended at both ends.



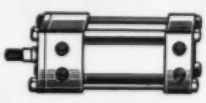
H65—Hydraulic Only
Flange Mounting on Rod End



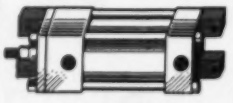
H66—Hydraulic Only
Flange Mounting on Cap End



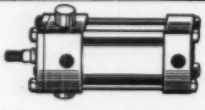
A72 and H72
Side Lug Mounting



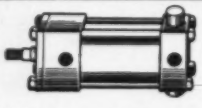
A74 and H74
Side Flush Mounting



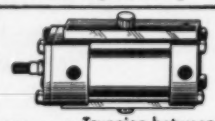
A77 and H77
Side or Foot Mounting



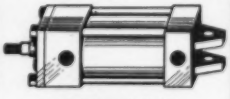
A81 and H81 Trunnion Mounting on Rod End



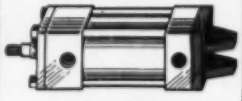
A82 and H82 Trunnion Mounting on Cap End



A83 and H83 Trunnion between Head and Cap (one week delivery)



A84 and H84
Pivot Mounting



A86 and H86
Pivot Mounting

IN STOCK BORES in Inches

"IN-STOCK" STROKES (in Inches)

	BORES	ROD DIA.	ROD TURN DOWN & THREADS		1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
AIR	1½	⅝"	7/16-20	Cushioned			3	4	5	6	7	8	9	10	11	12									
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12									
	2	⅝"	7/16-20	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	2½	⅝"	7/16-20	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	3¼	1"	¾-16	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	4	1"	¾-16	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	5	1"	¾-16	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	6	1⅜"	1-14	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	8	1⅜"	1-14	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
HYDRAULIC	1½	⅝"	7/16-20	Cushioned			3	4	5	6	7	8	9	10	11	12									
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12									
	2	1"	¾-16	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	2½	1"	¾-16	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	3¼	1⅜"	1-14	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	4	1¾"	1¼-12	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	5	2"	1½-12	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36

① "A" and "H" Models 82, 84 and 86 with strokes over 18" require stop tubes.

Column strength requires larger diameter piston rods for the following:

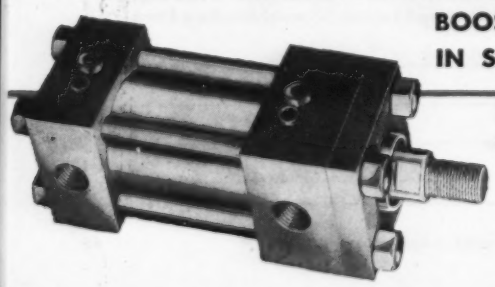
Air Cylinder Models A82, 84, and 86 with strokes inside area (1), when operated at 100 psi and over;

All hydraulic models with strokes inside area (2) and Models H82, 84, and 86 with strokes in area (4), when operated at 2000 psi and over;

Models H82, 84 and 86 with strokes inside area (3), when operated at 1000 psi and over.

Depending upon Trunnion Pin location, "A" and "H" Models 83 with standard diameter piston rods can have longer strokes than Models 82, 84 and 86.

See Miller File #251 for oversize piston rod and stop tube requirements.



BOOSTERS IN STOCK

Immediate Delivery on the following Miller 25 to 1 Ratio Boosters (80 psi air input produces 2000 psi hydraulic oil output): Model B4, 5" bore, 1" dia. ram, 6" and 12" strokes; Reciprocating Booster Model DA77-RBA8, 5" bore, 1" dia. ram, 6" stroke. Also Booster Tanks, 5" dia., 6" and 10" heights.

Write For Catalog and Stock Price List

Miller

MILLER FLUID POWER DIVISION
FLICK-REEDY CORP.

2002-06 N. Hawthorne Ave., Melrose Park, Ill.

AIR & HYDRAULIC CYLINDERS • BOOSTERS • ACCUMULATORS
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Strong, pliable, easy-to-work combination yarns by Branson are custom-made to your specifications.

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Highly skilled technicians, together with the most modern equipment and methods, produce combination yarns that are guaranteed to run smoothly on your machines.

For strong, pliable, easy-to-work Combination Yarns . . . tell us your requirements . . . let us work out the details with you.

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**Dupont's TM for polyester film.*

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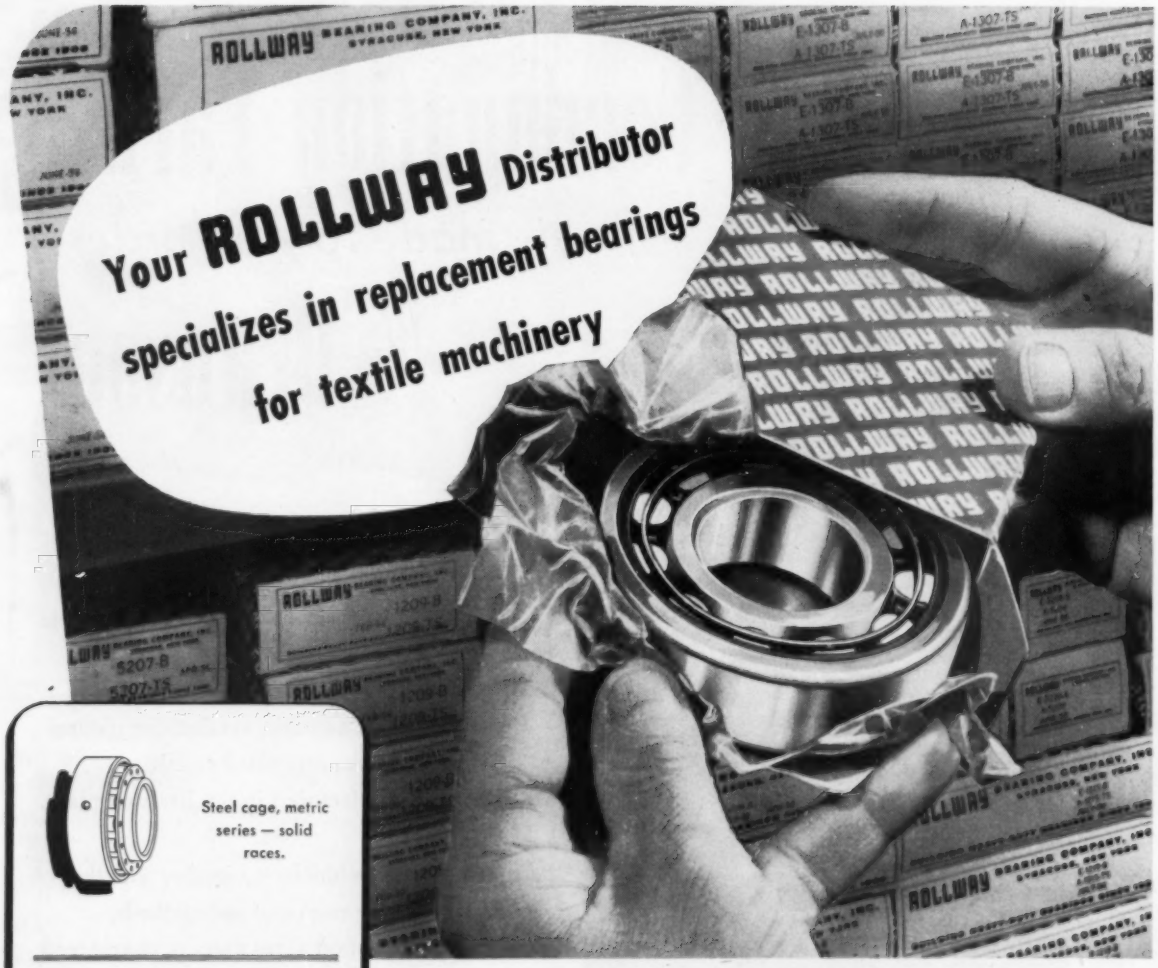

Steel cage, metric series — solid races.

Steel cage, inch series — planished sleeves.

Steel cage, inch series — no races.

Tru-Rol heavy duty, steel cage type. *All* Tru-Rol bearings have crowned rollers.

Name the machine: card — loom — drawing, roving or spinning frame — fulling mill . . . and your Rollway distributor has exactly the right bearing for each job.

Where freely turning shafts are the key to prevention of fibre stretching or breakage, Rollway assures continuous freedom from binding.

Where uniformity of thread or weave depends on absence of shaft displacement, Rollway provides unwavering rotation.

Where three-shift runs tax bearings to the utmost, Rollway delivers maximum hours of trouble-free performance.

There is a Rollway Bearing distributor near you. Call on him to deliver expert assistance in choosing just the right bearings for replacement service on any textile machine or motor.

ROLLWAY BEARING CO., INC., SYRACUSE, N. Y.

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Complete Line of Radial and Thrust Cylindrical Roller Bearings

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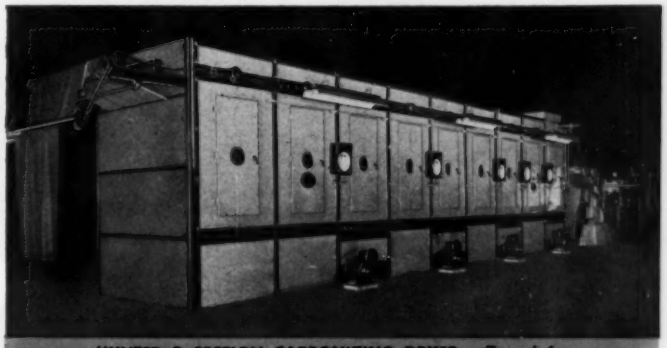
HUNTER Drying Equipment Builds Profits at STRONG-HEWAT

At Strong-Hewat and many other top-ranking mills, an increasing number of Hunter Dryers are playing a key part in building profits. The reason: Hunter Dryers process fabrics faster, safer, at lower steam, power and labor costs, with results unsurpassed for quality.

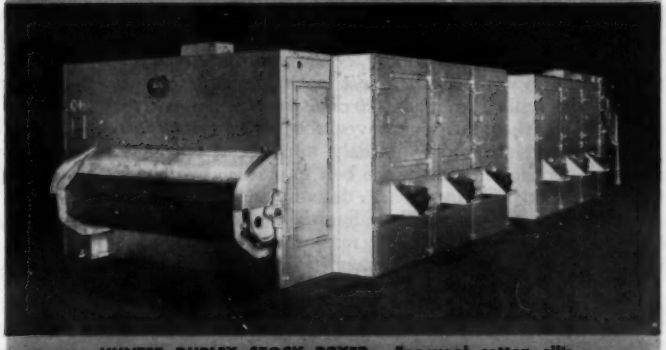
HUNTER BUILDS PROFITS FOR YOU WITH A COMPLETE LINE OF DYEING AND FINISHING EQUIPMENT FOR *EVERY* FABRIC REQUIREMENT:

Wool
Cotton
Blends
and ALL
Synthetics



HUNTER 9 SECTION CARBONIZING DRYER. Zoned for controlled carbonizing of woolens and worsteds. Eliminates streakiness, tendering, below standard tensile strength. Bulletin CC.

HUNTER UNIFLOW TENTER DRYER. For woolens, worsteds, blends, plushes, felts and synthetics. Dries up to 60 yards per minute. Bulletin UTD-2.



HUNTER DUPLEX STOCK DRYER. For wool, cotton, silk, rayon staple, rags, linters. Exclusive method permits stock to be turned over during drying cycle by controlled air streams. Bulletin DSD.

JAMES HUNTER MACHINE COMPANY

BUILT BY HUNTER ...IT'S DEPENDABLE

NORTH ADAMS, MASSACHUSETTS FOUNDED 1847

plus production

- efficient operation of modern equipment
- less down time of equipment
- quick, easy repair... rapid parts delivery

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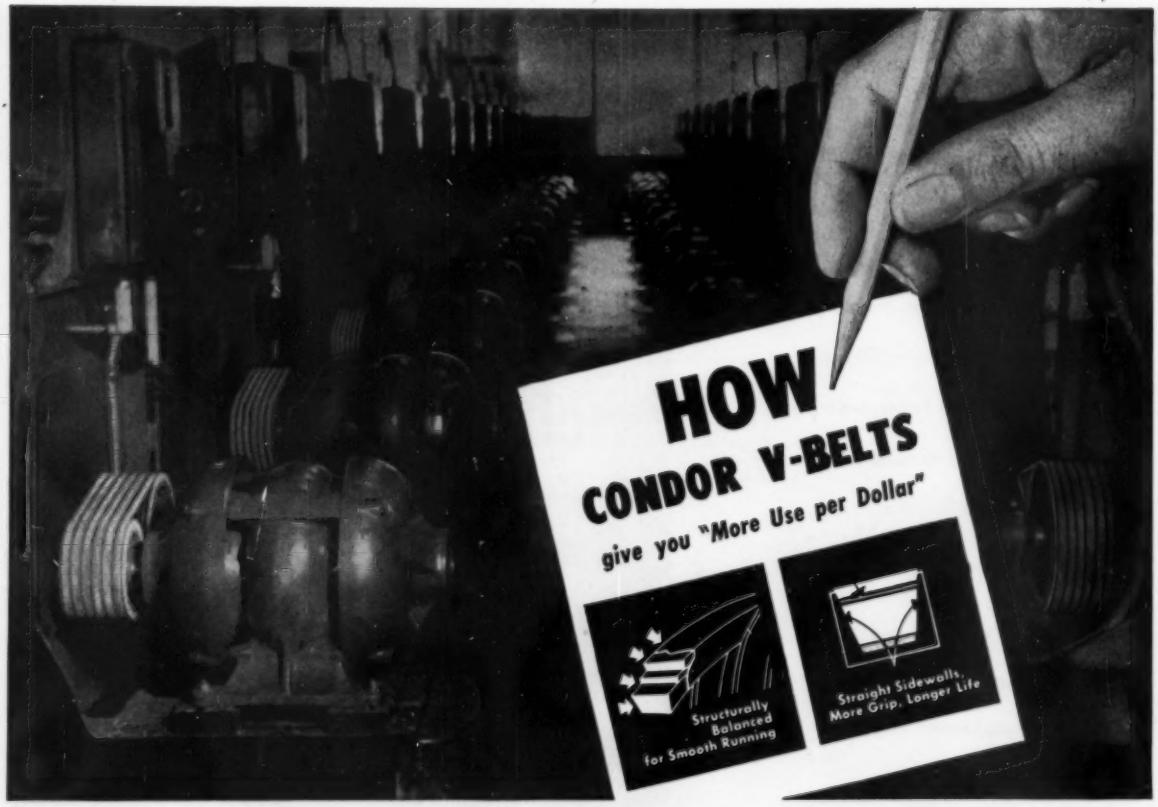

HOW
CONDOR V-BELTS
give you "More Use per Dollar"
Structurally Balanced for Smooth Running
Straight Sidewalls, More Grip, Longer Life

These Smoother Running V-Belts Lower Your Operating Costs

Condor V-Belt engineering makes the difference. The strength member is micro-positioned in heat dissipating rubber for a smoother running, cooler running drive . . . for longer life with the heaviest power loads. Condor V-Belt sidewalls are made *straight* to put positive pressure on the sheave grooves for more grip . . . less slip. Straight sidewalls help support the super-strength synthetic cords of the belt in a straight line so that *all* cords pull equally . . . deliver their maximum share of power. Controlled length is accomplished through prestretching during manufacture to remove inelastic stretch that might otherwise occur on the job.

NOW . . . Moisture-Proof Vacuum Packaging

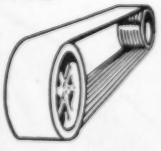
R/M's exclusive new vacuum sealed moisture-proof packaging assures positive V-belt length control for users of longer lengths in C, D & E cross sections! Belts are measured at the factory under controlled humidity and identified for precise matching. They are then vacuum-sealed in moisture-proof aluminum lined bags. The result—no shrinkage or elongation in storage . . . sustained uniformity on the drive! Length is certified from the factory to the field.

R/M Poly-V* Drive

A New Belt Drive Concept For Heavy-Duty Power Transmission. Eliminates V-belt matching problems. Delivers up to 50% more power in the same space as regular V-belts or equal power in less space.

Write for copy of Poly-V Drive Bulletin #6638.

(*Poly-V is a registered Raybestos-Manhattan trademark)



RM-606

MANHATTAN RUBBER DIVISION—PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.

Other R/M products include: Industrial Rubber • Fan Belts • Radiator Hose • Brake Linings • Brake Blocks • Clutch Facings Asbestos Textiles • Packings • Engineered Plastic, and Sintered Metal Products • Laundry Pads and Covers • Bowling Balls

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Du Pont's new "SOLO-MATIC" Bleaching Program

can double your production...cut costs up to 20%!

YOU GET double production, top-quality bleaching with the new Du Pont "Solo-Matic" system.

Du Pont's Single-Stage System bleaches cotton woven goods with the same effectiveness as multi-stage systems. Based on a new principle of simultaneous boiling out and bleaching of greige cloth, this system cuts over-all costs as much as 20%. Yet it is so compact that you can equal present production with half the equipment, half the floor space... or double production without adding more equipment.

YOU GET savings up to 50% in labor, steam, water, power with new Du Pont "Solo-Matic" J-Box.

Designed with fewer moving parts, Du Pont's simplified J-Box boosts quality, assures superior performance . . . provides more uniform, top-quality bleaching. Construction costs for Du Pont's new J-Box design may be reduced by as much as 20%.

YOU GET a full survey of your bleaching operation.

Du Pont's "Solo-Matic" service team is ready to help you reduce your bleaching costs through a detailed survey of your plant. These bleaching experts take samples of your bleaching bath, check steam and water consumption . . . without any interruption of production schedules. Their recommendations on how to cut costs while maintaining, and even improving, quality will be submitted to you in a confidential report.

* * *

Du Pont does not build or sell bleaching equipment but works closely with equipment manufacturers and textile processors to create improvements. The "Solo-Matic" Bleaching Program is the result of both this cooperation and of long-established Du Pont research in the textile field. To get all the facts on the "Solo-Matic" Bleaching Program . . . to find out how you can achieve new highs in efficiency and economy, mail the coupon below today.

DU PONT

PEROXIDES

"ALBONE" 50
50% hydrogen peroxide

"ALBONE" 35
35% hydrogen peroxide

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.),
Electrochemicals Department TW-10
Wilmington 98, Delaware

Please ask my Du Pont Representative to call with the "Executive Summary" giving full information on the new "Solo-Matic" Bleaching Program.

Name_____ Title_____

Firm_____

Address_____

City_____ Zone_____ State_____

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Textile Notes on Corn Products

Size fluidity is always right... from cooking to application with

EAGLE® Thin-Boiling Starches

Higher production rates of modern slashers make the uniform fluidity of Eagle Starches vitally important.

From size kettle to application the viscosity and strength of Eagle brand starches is uniform, assuring you top weave room performance.

Despite continued heating, agitation and pumping, these acid-modified, thin-boiling starches consistently give the precise size fluidity you need in a modern slashing operation.

Eagle brand starches produce a uniform size mixture that penetrates the yarn evenly. Where you want more weight of size, or a thicker size film, try Eagle brand starches. They maintain their viscosity and give you a maximum of size concentration. Available in a full range of fluidities, try Eagle brand starches.

Ask the man from Corn Products. Ready to assist you in any way, he has at his disposal the most complete laboratory and technical facilities in the industry. The man from Corn Products can also provide engineering service for the installation of bulk-handling equipment. Write or phone for information, there is no obligation.

1906 • **50th ANNIVERSARY** • 1956
CORN PRODUCTS REFINING COMPANY
17 Battery Place, New York 4, N. Y.

Corn Products makes these famous starches for the textile industry—
Eagle • Foxhead • Globe • Hercules • Ten-O-Film • Globe Dextrines & Gums

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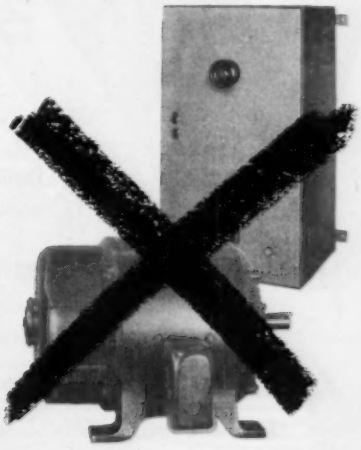
No need for Special Motors, Control with *Vari-Pitch* Sheaves



***Vari-Pitch* sheaves are the low cost way of providing accurate stepless speed control. There's a type and size for every need.**

Two Basic Types

1. Stationary control type can be used for infrequent speed changes when sheave is at rest.

2. Motion control type is available for applications requiring repeated speed changes while drive is in motion.

Both types are available in standard range sheaves to provide speed variations to 196%, and in wide range type sheaves to provide variations to 400%.

Texrope and *Vari-Pitch* are Allis-Chalmers trademarks.

For complete information
call your nearby A-C office or distributor — or write Allis-Chalmers, General Products Division, Milwaukee 1, Wisconsin. A-4843

ALLIS-CHALMERS

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Double-Check These Factors

Before You Buy Drawing Equipment

Double-check these factors on sample frames in your mill — in our pilot plant — or against performance in other mills.

For Sliver Strength and Evenness

Ideal Drawing cannot cut, bruise, or damage stock in any way. It automatically evens out thick and thin places in the roving. Sealed ball-bearings eliminate danger of oil spots.

For High Speed Production

Ideal Drawing produces good quality drawing at speeds up to 450 feet per minute. Produces highest quality drawing at "cruising speeds" of 250 to 300 ft. per min.

For Economy

On Original Investment

New Ideal Frames or replacement deliveries cost less to buy than does any other equipment capable of equal production.

On Labor

Mill records show consistently large savings on operating and maintenance labor.

On Floor Space

Ideal Drawing equipment releases valuable floor space for other purposes.

On Power Consumption

Ideal Frames require only 3 HP for 16 deliveries.

For Versatility

Ideal Drawing will handle all fibres and blends with ease.

Double-check, and you will find that Ideal High Speed Ball Bearing Drawing* — either in new Ideal Frames or replacement deliveries — costs you less to buy, less to run, and less to maintain, and produces the finest quality drawing sliver. Write for full information today.

*Patent Nos. 2,610,363; 2,490,544; 2,412,357. Other patents pending.

Ideal Industries, Inc.
Bessemer City, N. C.

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WISTERIA MAUVE

one of the colors shown in the **SUMMER 1957**

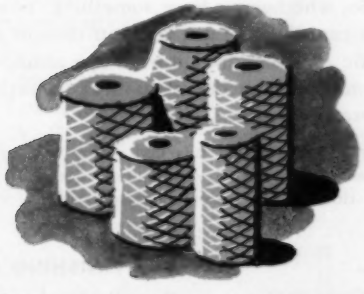
Franklin Process

COLOR NEWSLETTER

We issue four such letters a year. They contain actual dyed yarn samples showing the latest color trends, as observed by a professional color stylist.

One way to increase sales is to be RIGHT in your color selections.

Make sure NOW that you're on our Color Newsletter mailing list.



Franklin Process

YARN MERCHANTS AND LARGEST PACKAGE DYERS IN THE WORLD, DYEING EXCLUSIVELY ON THE FRANKLIN SPRING

Providence • Philadelphia • Greenville • Chattanooga
Fingerville, S. C.
New York Representatives — 40 Worth Street

A Message to Management about DRYING EQUIPMENT

No. 5 in a Series
PROGRESSIVENESS

PROGRESSIVENESS, according to the dictionary, is "movement forward" or "advance to an objective". Note the word "forward". It is pertinent to this discussion.

WHAT'S NEW?

This question is asked us so often that it seems many people in the textile industry regard change and progress as one and the same. Change indicates "movement", but the movement is *not* necessarily "forward". That is why we emphasize here that when we move in a new direction, as regards drying and ventilating equipment, we move forward — not backward.

There has been more progress in the textile industry in the last 25 years than in the previous century. This is commendable. But it has tended to make some of us "spoiled children". We too hastily cast aside the tried and proven and "reach out for a new toy", without regard for value or past performance.

Mills should investigate, or even try new equipment designs, of course. But they should not ignore the "old reliables" or try the new until they have a sound basis for doing it — until they have given reputable competition a chance to speak its piece — until they are sure they're not trying something which has been tried before without success.

WHY NEW DESIGNS?

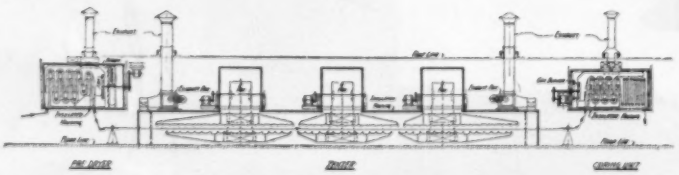
There are two sound reasons for changing old designs or creating new designs of drying and ventilating equipment. One reason is to improve the efficiency of established practices. The other is to meet the requirements of new fibres, new dyestuffs or new finishes.

In both categories, it is fair to say that we have been leaders. Within a period of 13 years we have developed 10 brand new designs utilizing air or a mixture of air and water vapor and have made numerous improvements on them from time to time. Some of them, such as curing units, were for new fibres or new finishes. (The new designs were listed in a previous "Message", so we will not repeat them). Furthermore, we have collaborated with other leaders in their respective fields (such as General Dye, Dupont, Rohm & Haas, Goodrich and RCA) in developing these designs.

In view of the great number and variety of designs which we have on file, it is not strange that some of them, modified or extended, are often an immediate and the best answer to the requirements of processing new fibres or new finishes. But we do not promote them as new machines. Nor do we make superficial changes just so we can say "New".

So, whether we have something "new" or not, you can depend on it that our designs are never static and that they are always aimed at maximum production of first quality goods at minimum *operating* expense.

NOTE: A reprint of this and other "messages" in the series will be mailed to you upon receipt of your name and title on your company letterhead.



A & G FINISHING RANGE
(longitudinal section)
This design was originated by us and includes many A & G innovations, such as high velocity jet nozzles.

ANDREWS and GOODRICH, Inc.
336 Adams Street, Boston (Dorchester), Mass.
Southern Representatives: McSpadden & Scantland, Charlotte, N. C.

your Two best sources for UREA

Allied's Nitrogen Division has 2 urea plants – one at South Point, Ohio and one at Omaha, Nebraska. When considering your source of UREA supply, Allied tops the list with its multi-plant production. Quality? Very high. Delivery? Fast – no matter where you are, thanks to widely separated producing locations. Carlots and trucklots from the plants. LCL from warehouse stocks in Passaic, N. J.; Chicago, Ill.; Providence, R. I.; East St. Louis, Ill.; and Charlotte, N. C. All shipments in easy-to-use, 100 lb. moistureproof multiwall paper bags.

Allied

...and

Allied

Dept. U1-30-4

Allied Chemical — NITROGEN DIVISION

40 Rector Street, New York 6, N. Y.

Ethanolamines • Ethylene Oxide • Ethylene Glycols • Urea • Formaldehyde • U. F. Concentrate—85 • Anhydrous Ammonia • Ammonia Liquor • Ammonium Sulfate • Sodium Nitrate • Methanol • Nitrogen Tetroxide • Nitrogen Solutions • Fertilizers & Feed Supplements

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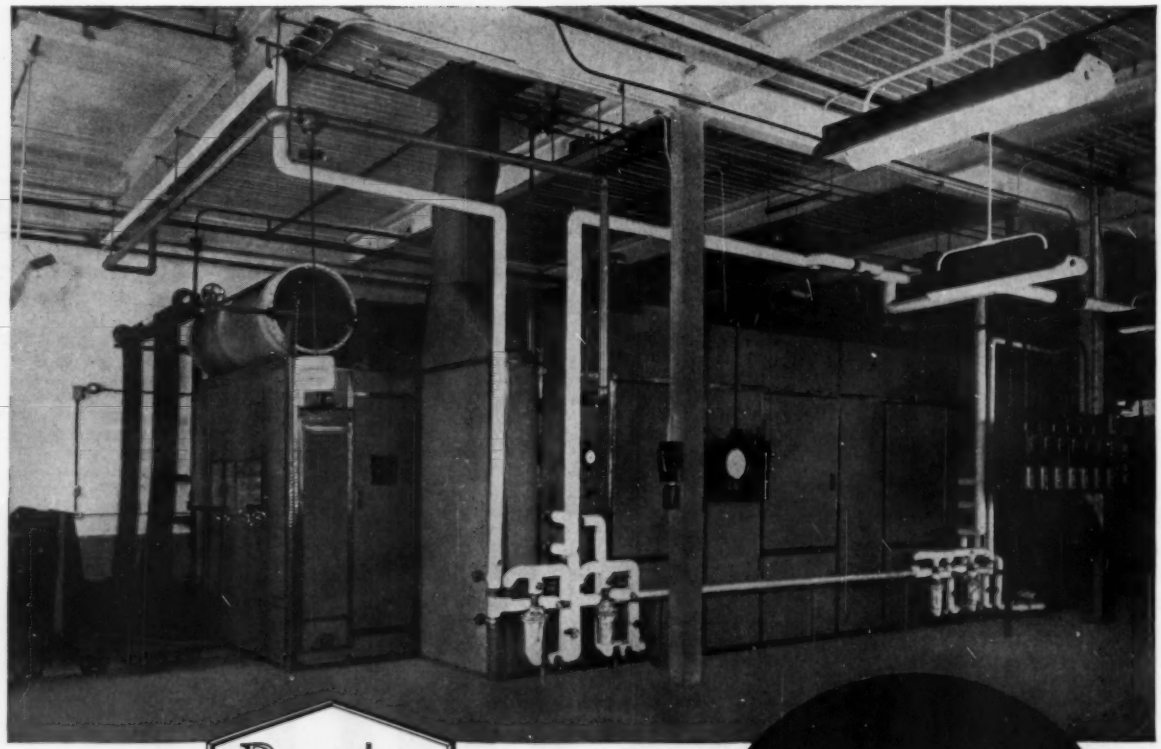
CURE TEXTILE FABRICS AT A PROFIT!



Installation view of Proctor Loop Curer

THE Proctor

LOOP CURER and ROLLER CURER

These rugged, high-capacity machines feature the latest design and construction improvements—all geared to increase your profits. Units can be combined with existing equipment to meet your exact requirements. For fabrics that will not handle properly in loop, the roller curer is recommended. Recent developments for this machine also include improved air distribution, flexibility in holding capacity, and no-stretch operation. These machines are the result of long experience in supplying machinery to the textile industry. For the complete story of the profit-making opportunities offered by Proctor, write today for latest information bulletins.

- GREATEST CURING UNIFORMITY
- IMPROVED DESIGN
- MAXIMUM CAPACITY WITH MINIMUM POWER REQUIREMENTS
- FLEXIBILITY OF OPERATION
- SIMPLIFIED INSTALLATION

PROCTOR & SCHWARTZ EQUIPMENT FOR THE TEXTILE FIELD

AUTOMATIC BLENDING SYSTEMS • WEIGHING FEEDS • PICKERS • SHREDDERS • BALE BREAKERS • SYNTHETIC CARDS • GARNETTS • DRYERS FOR FIBROUS MATERIAL • YARN DRYERS • HOT AIR SLASHER DRYERS • CLOTH CARBONIZERS • ROLLER DRYERS AND CURERS • LOOP AGERS FOR PRINT GOODS • TENTER HOUSINGS • OPEN-WIDTH BLEACH SYSTEMS FOR WOVEN FABRICS • MULTIPASS AIRLAY DRYERS • NYLON SETTING EQUIPMENT • CON-O-MATIC WASHERS • CONTINUOUS BLEACH SYSTEMS FOR PRODUCING TUBULAR KNITS • EQUIPMENT FOR "SANFORIZED" ® SHRUNK-TO-FIT FABRICS • CARPET DRYERS

Proctor **PROCTOR & SCHWARTZ, INC.** Philadelphia 20, Pa. Manufacturers of Textile Machinery & Industrial Drying Equipment.

← For more data, write this page number on Reader-Service card.

This FELT can CONTROL that Vibration!

When machinery has the shakes, put it on Vibra-Mount* Felt. This resilient cushion greatly reduces the amount of vibration transmitted to the floor, as much as 85%. People are happier, buildings safer. Vibra-Mount Felt is long lived because it takes compression with a minimum of set. In almost every case lag bolts are unnecessary, so machines can be rearranged with a minimum of difficulty. Write for FREE booklet, "How to Reduce Vibration." For technical information, ask for Data Sheet No. 10.

*T. M. Reg.

American Felt Company

TRADE MARK ®

GENERAL OFFICES: 90 GLENVILLE ROAD, GLENVILLE, CONN.

SALES OFFICES: New York, Boston, Chicago, Detroit, Cleveland, Rochester, Philadelphia, St. Louis, Atlanta, Greenville, S. C., Dallas, San Francisco, Los Angeles, Portland, San Diego, Seattle, Montreal—PLANTS: Glenville, Conn.; Franklin, Mass.; Newburgh, N. Y.; Detroit, Mich.; Westerly, R. I.—ENGINEERING AND RESEARCH LABORATORIES, Glenville, Conn.

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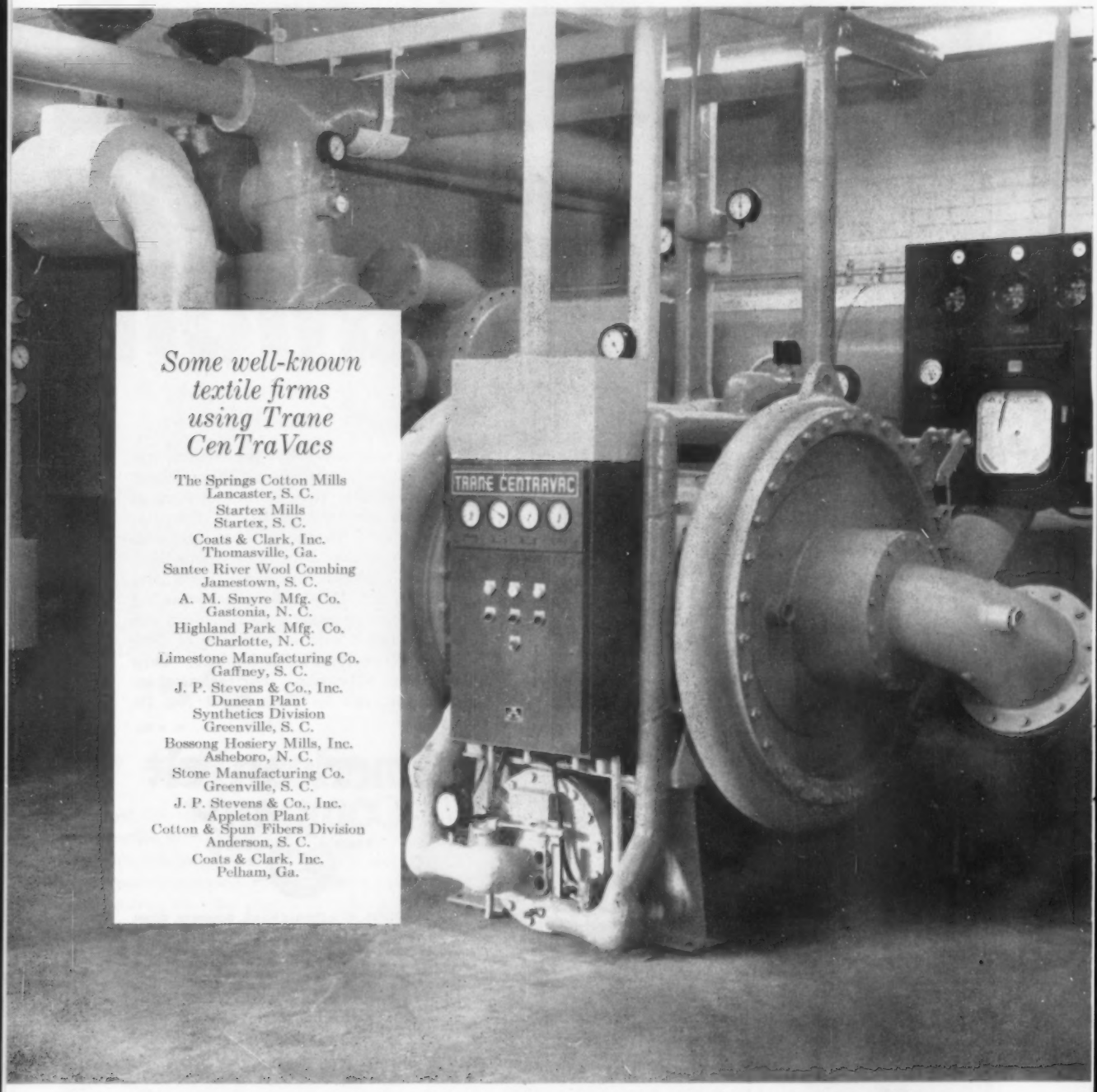
Push button air conditioning with famous Trane



Some well-known textile firms using Trane CenTraVacs

The Springs Cotton Mills
Lancaster, S. C.

Startex Mills
Startex, S. C.

Coats & Clark, Inc.
Thomasville, Ga.

Santee River Wool Combing
Jamestown, S. C.

A. M. Smyre Mfg. Co.
Gastonia, N. C.

Highland Park Mfg. Co.
Charlotte, N. C.

Limestone Manufacturing Co.
Gaffney, S. C.

J. P. Stevens & Co., Inc.
Dunean Plant
Synthetics Division
Greenville, S. C.

Bossong Hosiery Mills, Inc.
Asheboro, N. C.

Stone Manufacturing Co.
Greenville, S. C.

J. P. Stevens & Co., Inc.
Appleton Plant
Cotton & Spun Fibers Division
Anderson, S. C.

Coats & Clark, Inc.
Pelham, Ga.

The famous TRANE CenTraVac—the industry's first hermetic centrifugal water chiller. Completely automatic, it stops, starts, runs by itself . . . adjusts to varying cooling requirements with power savings in almost direct proportion to load requirements. Photo courtesy, A. M. Smyre Mfg. Co., Ranlo, North Carolina.

← For more data, write this page number on Reader-Service card.

for any size job automatic water chillers

Now—CenTraVac units in capacities up to 1600 tons!

Just push a button to start this TRANE hermetic, centrifugal water chiller! It's completely automatic . . . runs by itself, with no full-time attendant needed. And now, you can have every benefit, every advantage of the CenTraVac's exclusive design in capacities up to 1600 tons! New large units provide the same unattended operation, same automatic modulation as the CenTraVacs now used by so many textile manufacturers.

The TRANE CenTraVac adjusts its use of power automatically, in almost direct proportion to the cooling load—from 100% down to 10% of capacity. That means you can have *partial operation* without the usual penalty in operating costs! You use just the amount of cooling you need to meet seasonal, daily or hourly requirements.

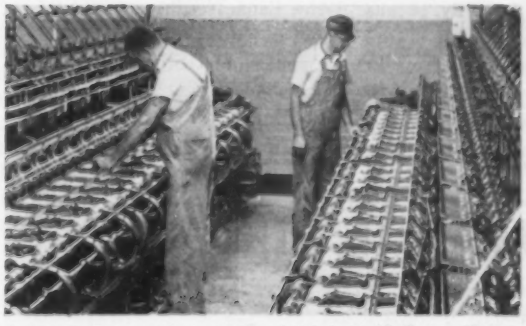
For the complete story on how TRANE CenTraVacs are helping textile plants keep air conditioning at design conditions for peak performance of men, materials and machines—call your nearby TRANE Sales Office, or write TRANE, La Crosse, Wis.

Remember . . . the Trane CenTraVac saves 3 ways!

• **Costs less to install!** TRANE CenTraVacs require no costly multi-level bases. May be set on any level surface strong enough to support its weight. Wide range of sizes makes it easy for you to pick the right CenTraVac for your cooling load requirements.

• **Costs less to maintain!** TRANE CenTraVacs have only *one* major moving part! Only two pressure lubricated bearings. There is *no* gear box . . . *no* shaft seals! Maintenance and service are routine . . . with no critical adjustments to worry about. A TRANE CenTraVac in Grand Central Station, New York City, has run *continuously*, 24 hours a day, for three years—*without maintenance!*

• **Costs less to run!** The TRANE CenTraVac costs less to operate than any other mechanical refrigeration system! You save power in almost direct proportion to load requirement . . . automatically *throttle down* to furnish just the amount of cooling needed. And there's no refrigerant leakage with a CenTraVac! It's truly *hermetic*—all working parts sealed in—no shaft seals to leak.



At famous Bessong Hosiery Mills of Asheboro, N. C., two TRANE CenTraVacs automatically provide chilled water for the air conditioning system. Each unit can unload down to 10%; stable operation is possible down to 5% of total refrigeration capacity!

For heating, cooling, ventilating . . .
For any air condition, turn to

TRANE

MANUFACTURING ENGINEERS

The TRANE Company, La Crosse, Wis. • Eastern Mfg. Div., Scranton, Pa. • Trane Company of Canada, Ltd., Toronto
90 U.S. and 19 Canadian Offices

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At the Nicest Parties

For fun, frolic or formal attire, nothing sells better than quality knit-wear from machines equipped with Arrow Latch Needles. You can depend on that extra margin of quality, because Arrow Latch Needles by Textile are always smooth, always strong, and always free in latch movement. Call today for Arrow Latch Needles, Flat Stock and Leaded Assemblies — prompt delivery from stock in Reading, Pa., Asheboro, N. C., and Manchester, N. H.

Arrow LATCH NEEDLES

Wire Products Division
TEXTILE MACHINE WORKS • READING • PENNA.
In the South: Asheboro, N.C. In the North: Manchester, N.H.
Builders of Textile Machinery Since 1900

Nearly every competitive advantage starts with the machine

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The LONG-RANGE VIEW

Imports We Are Not Watching

The cloud of dust kicked up in late months about Japanese imports has obscured another source of foreign competition from which U. S. mills are taking a neat licking. Three recent incidents that emphasize this problem are:

1. Women's cotton blouses from Italy have fairly taken the New York market. First introduced at higher prices but now selling at competitive medium-range prices, these blouses have distinct superiority in such qualities as yarn fineness, style, and tailoring. Wearers give such reactions as "Wonderful" and "Delightful."

2. Men's socks selling at medium prices and labeled "Imported from England" outsold other socks in the same price, style, and quality range.

3. A recent style show in New York was promoted as featuring garments of "high style and fine fabrics imported from Italy," selling at medium-range prices.

These incidents are only three of dozens of similar ones that could be cited. The point is that right in the heart of the U. S. market—right on the streets where practically all U. S. mill products are sold, regardless of where they are made—foreign fabrics and styles are beating the pants off U. S. fabrics and styles.

What's Wrong?

It is an odd fact that U. S. consumers have a strong notion that all U. S. products—except textiles—are the best in the world. Only a show-off would think of buying a European car. Few U. S. consumers even know whether such things as refrigerators, washing machines, power lawn mowers, canned goods, etc. are made outside the U. S. Even Swiss watches and clocks, unless the fact that they are Swiss is concealed, are looked on as not quite up to par.

Yet almost without exception 160-odd-million Americans are convinced that any textile fabric or garment imported from Europe is better than anything made in the U. S.

So far as we have ever known, nothing has been done, or even attempted, to reverse this conception. Little has been done to establish U. S. fabrics as quality fabrics or U. S. styling as anything except cut-rate copies of European styling.

The truth is that the combination of U. S. fabrics, styling, and tailoring is on an average the best in the world. The truth also is that U. S. mills, garment manufacturers, and retailers have made no effort to tell that story to U. S. consumers.

Mills in the Dark

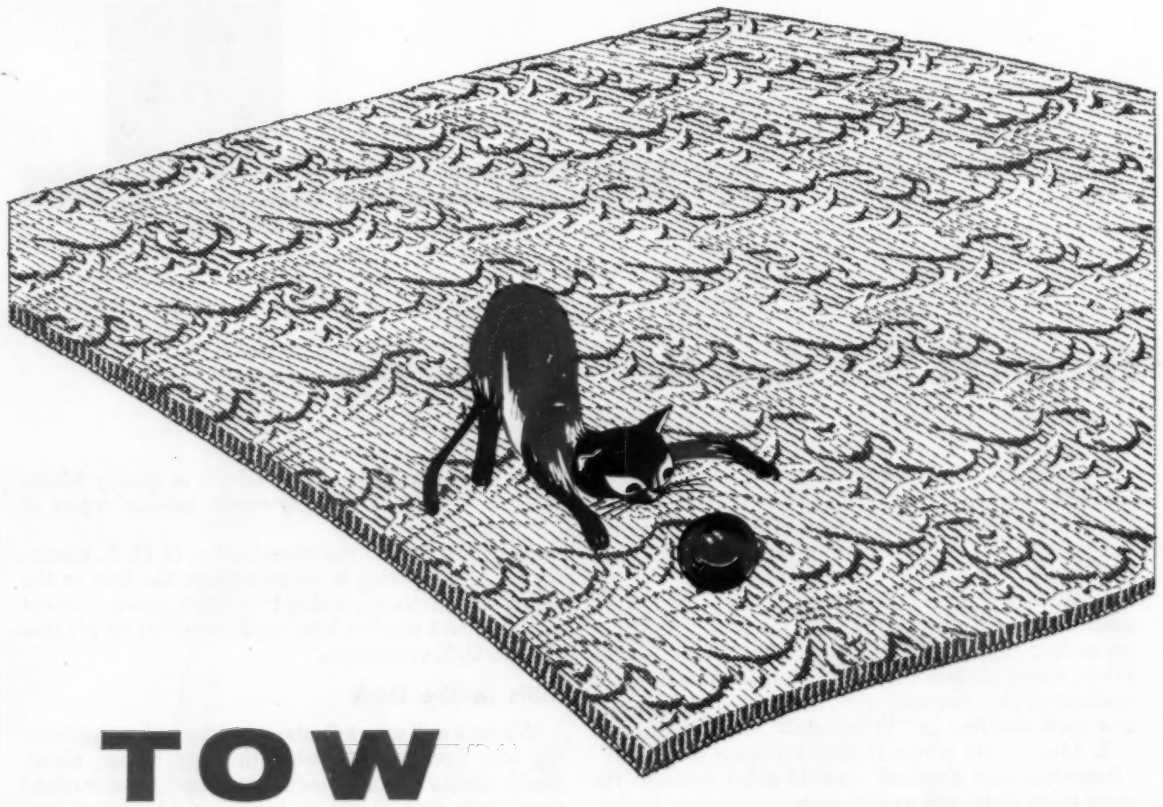
We hear mill men talk about styling and merchandising who have no idea what they are talking about. Nearly always they are production men who understand completely such things as balancing production, machine efficiency, jobloads, etc. but are complete strangers to how styles are created and how market trends are made or changed by merchandising.

Since they are strangers, mill men are suspicious of them and will have no part of them. Instead of creating styles and starting market trends, they sit still and keep their fingers crossed in the hope that they are not caught too far afield.

On a few occasions—notably in late months in opposing Japanese imports—the whole textile industry has welded itself into a single tremendous power with one tremendous voice. When that occurs, every literate person in the U. S. gets a strong indoctrination of one idea.

If such a power and such a voice were turned on one constructive move—such as creating superior U. S. fabrics, styling, and tailoring and promoting them—the heart of the U. S. textile market would not long be flooded with "imported from" blouses, socks, dresses, and coats. U. S. consumers who now seek out imported textiles because of some supposed superiority would come to avoid them as they now do foreign cars and refrigerators.

O. M. Thomas



TOW

. . . is it a new way to magic in carpets?

What happened to sweaters could happen to carpets. Less than three years ago there was no High-Bulk Orlon*. As the result of modern tow processing on Turbo Stapler machines, High-Bulk Orlon is now the favored sweater yarn. Today 90% of the most salable high-bulk yarns start on Turbo Staplers.

The Turbo Stapler processes man-made fibers delivered as tow. It takes the continuous, parallel fiber filaments — and, by controlled heat-stretching, breaking and crimping, delivers an exceptionally even sliver with entirely new fiber characteristics. It can alter denier, increase tensile strength, make long or short staple. It can produce any desired hand, soft as a cloud, harsh as a whisker.

Is tow processing the way to new beauty and increased serviceability in carpet yarns? We offer our complete cooperation to spinners who want to find out.

*T.M. duPont Acrylic Fiber

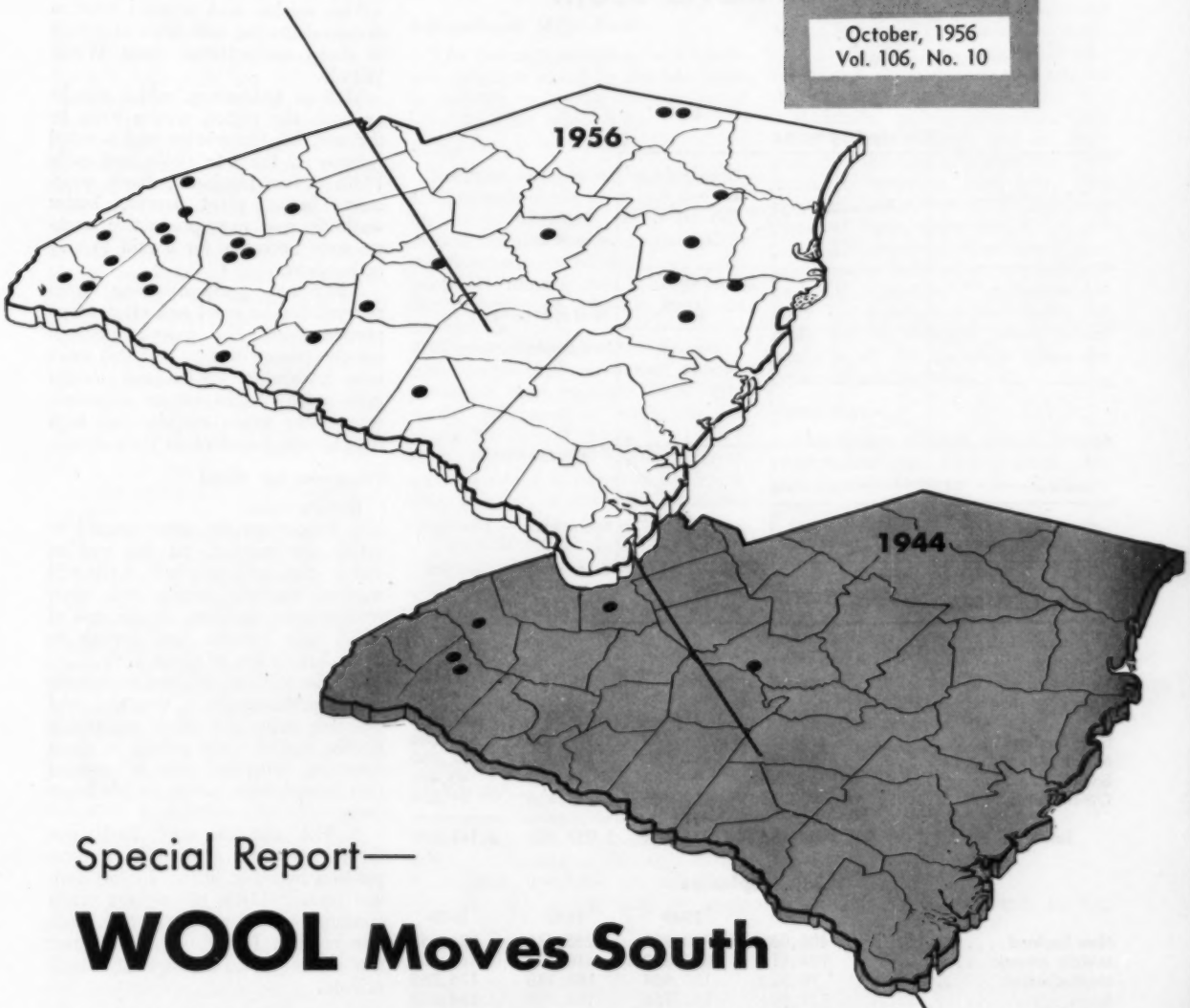
TURBO
SINCE 1929

TURBO MACHINE COMPANY
LANSDALE, PA.
Makers of precision Heat and Steam Setting Machines, Crimpers and Tow Processing Equipment

← For more data, write this page number on Reader-Service card.

Textile World
October, 1956
Vol. 106, No. 10

GROWTH OF WOOL PROCESSING in the South is evident by comparing the number of woolen and worsted plants in South Carolina in 1956 to 1944. Each dot represents one mill.



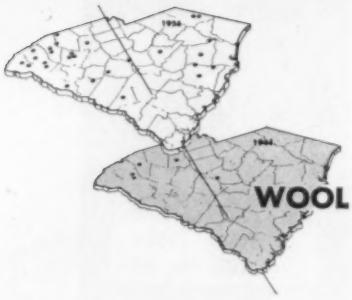
Special Report—

WOOL Moves South

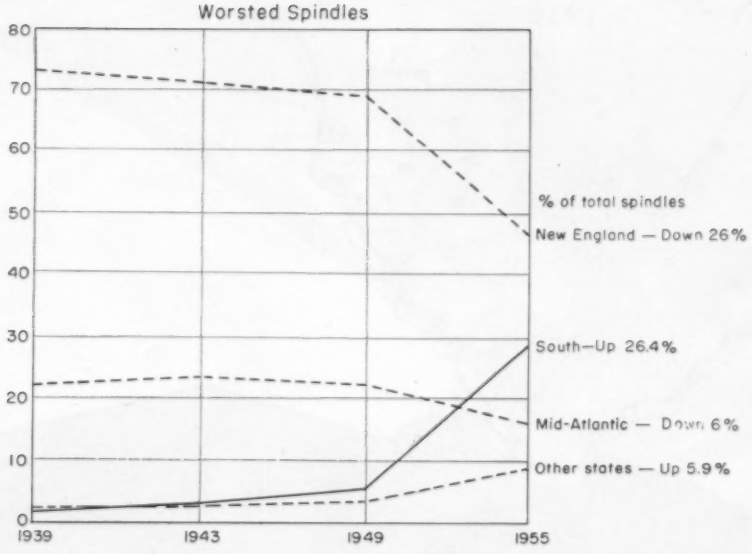
Woolen and worsted manufacturing has grown by leaps and bounds in the South. In 1949, the South had 261,594 spindles; in 1955, 403,182—an increase of 54%.

- What caused this growth?
- Will it continue?
- What are the advantages and disadvantages of processing wool in the South?

In this special report, TEXTILE WORLD probes for answers to these questions and cites case histories of new woolen and worsted operations in the South.



WOOL MOVES SOUTH

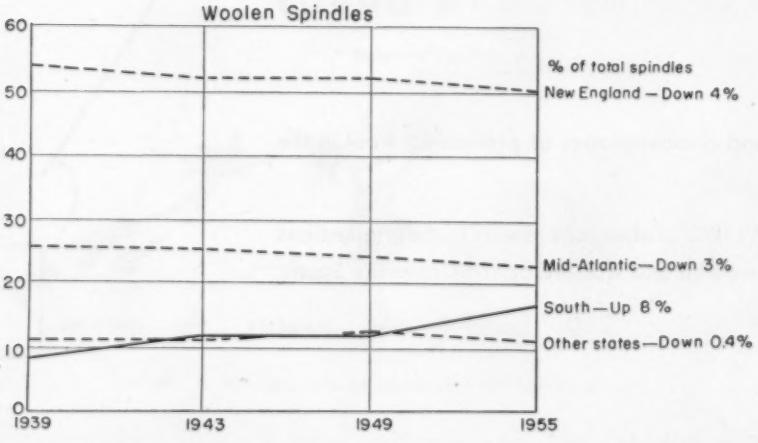


Worsted Spindles

	1955	1949	1943	1939
New England	448,466	1,266,740	1,390,135	1,564,044
Middle Atlantic	152,494	414,130	454,330	484,930
South	269,288	95,838	58,312	40,448
Other States	80,238	60,036	54,816	51,636
Total	950,486	1,836,744	1,957,593	2,141,058

Woolen Spindles

	1955	1949	1943	1939
New England	408,863	749,919	855,471	986,253
Middle Atlantic	184,815	339,539	414,504	464,451
North Central	79,520	138,854	160,245	175,065
South	133,894	165,756	192,654	154,024
West	10,728	29,792	30,676	31,976
Total	817,820	1,423,860	1,653,550	1,811,769



The woolen and worsted systems of manufacturing have been in a state of sharp readjustment since World War II.

Modern technology, which caught up with the cotton system prior to the war, hit the woolen and worsted systems in the late 1940s and early 1950s. New machines, fewer processes, better plant layout, better methods, and more-productive workers were necessary for a mill to stay in business.

Additional pressure came from competition by wool and other fibers processed on the more-economical cotton system. And to add still more woe, established woolen and worsted mills were caught in an economic squeeze by union workers and high fringe costs prevalent in their areas.

Pressures on Wool

Results were—

1. Fewer spindles were needed to satisfy the market. At the end of 1949, the country had 4,684,464 woolen, worsted, carpet, and other wool-running spindles. At the end of 1955, this number had shrunk to 2,586,126—a loss of about 45%.

2. The spindles left had to operate more economically. Woolen and worsted yarns and cloth acceptable in the market were rolling in from short-cut, modified cotton systems that turned them out at sharply lower costs.

3. The use of wool itself was shrinking, largely as a result of competition by other fibers. In the postwar years 1947-49, the average yearly consumption of wool was 641.2-million pounds. In 1953-55, the volume was down to an average of 440.5-million.

Problem: What To Do?

Established woolen and worsted mills had one choice: modernize or get out of business.

Many of them modernized; many of them got out of business. Some of them built new, modern plants in the South.

While the country's total woolen and worsted spindles (not including carpet-yarn and other wool-running spindles) shrank from 3.2-million to 1.7-million, a decrease of 45% from 1949 to 1955, spindles in the South rose from 261,594 to 403,182, an increase of 54%. The South's share of total spindles climbed from 8% to 23%.

Growth in the South

Wool has been processed in the Southeast since Colonial times, but up to 10 years ago the output was insignificant. The first modern worsted mill in the South began operations in South Carolina in the early 1920s. Costs turned out to be lower in the South, but it was adaptation of the high-production, low-cost cotton-spinning system to the use of wool that led to real progress.

In 1938, Newnan Cotton Mills, Newnan, Ga., began working with wool-synthetics and wool-cotton blends on basic cotton frames. By 1939, the mill was successfully processing wool staple up to 5 ins. on modified cotton equipment. Newnan's success prodded other Southern manufacturers into producing worsted yarns; and the American system of worsted spinning (first named and described in TEXTILE WORLD, March, '46, p. 123) was born.

In the 1940s, the Southern growth began.

In 1947, Deering-Milliken began worsted manufacturing at new mills in Johnston and McCormick, S. C. Two years later, the same company was finishing its worsted fabrics in a new Pendleton, S. C., mill. J. P. Stevens began producing woolens and worsteds in Georgia in 1948. The establishment of these mills gave a push to other operators thinking about building new mills in the South.

Worsted Highlights Growth

A majority of the wool-processing operations established in the South after 1940 have been worsted mills. Reason: the woolen system, not requiring the multiple operations of the worsted system, does not offer the same rewards for efficiency and modern methods that the worsted system offers. Too great a portion of the price of woolen goods is represented by the raw wool itself.

However, woolen and other wool-using mills have gone South, although in smaller numbers. The new Amerotron mill at Barnwell, S. C., is the largest integrated woolen mill in the country. Albany Felt has built a new mill at St. Stephen, S. C., to make papermaker's felt. Other papermaker's felt mills have gone up in Georgia. James Lees & Sons built a new carpet-yarn mill at Dahlonega, Ga., last year.

Most of the mills that have sprung up in the South since World War II are branches of Northern organizations. This situation is different from the Southern cotton-mill growth because most of the cotton mills were financed by Southern capital.

Advantages Mills Find—

The foremost advantage in a Southern operation found by the new mills is reported to be the cooperation of labor and the community.

—Labor

Southern worsted and woolen mills, unorganized for the most part, are not limited to workloads based on outmoded machine speeds. In the 1920s, the Southern cotton mills, with the so-called "minute men," established the principle of jobloads based on timestudies.

In most cases, the migrating woolen and worsted mills were alert enough to adopt that principle. The estimated difference in workloads between North and South is 1½ to 1 in the South's favor. Therefore, modernization pays off better in the South than in some of the older industrial areas.

There is also a larger supply of younger workers in the South. In 1948, 28% of the population of New England was under 18 years old, compared with 42% for South Carolina, for example. With agriculture becoming more mechanized, more and more young people from farms are available to industry. Most mills have found these young farm people an excellent source of new labor.

—Community

Another factor influencing the establishment of a mill in the South is the cooperation of the community. A producer interested in building a new mill gets all the help he needs from state, civic, and private organizations. State development boards arrange all accommodations for a trip to a given area, furnish all necessary data about sites, help with public relations, and do whatever else can be done to attract new industry.

Railroads, power companies, and other private interests also do their part to influence a prospective producer to locate in their area. For example, the Citizens & Southern National Bank, Columbia, S. C., set up a development department last year to assist in bringing new industry to South Carolina. The bank's Atlanta, Ga. branch has been doing the same job in Georgia. Many other banks in all the Southern states are active in similar roles.

—Other Factors

The warm climate, which lowers construction and heating costs, has also contributed to the Southern growth.

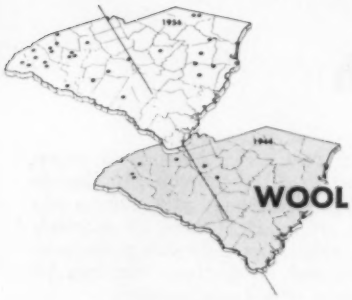
Taxation, long a storm center between Northern and Southern interests, is generally lower in the South than in most Northern industrial areas.

In-state transportation costs have been cut in some states. For example, in South Carolina the S. C. State Public Service Commission has cut transportation rates on wool tops, noils, shoddy, and many other wool items in half to encourage the development of woolen and worsted mills. These rates apply only on intrastate common motor carriers.

Disadvantages—

But starting a new mill in the

AMEROTRON'S new mill at Barnwell, S. C., a division of Textron American, Inc., makes men's and women's wool and wool-blend suitings. This $10-million plant opened in 1956.



WOOL MOVES SOUTH

South is no guarantee of success.

—Labor

Throughout the Southeast there are areas where labor is not so favorable to industry. Locations near larger cities, for example, are prone to unionization and labor unrest. In these areas, the general spirit of cooperation between labor and management is lost. A higher-paying industry may be in the area, or there may have been labor difficulties in the past.

For example, in Huntsville, Ala., a mill operated by Deering-Milliken was liquidated in 1947. Huntsville is the home of the Redstone Arsenal, with a large employment and relatively high wages. The reason for the liquidation, given in a recent talk by Roger Milliken, president, was poor cooperation of labor, which made management unwilling to invest in new machinery. Lincoln Mills in the same city, plagued with a strike, ceased operations.

—Personal Habits

In other locations, particularly where industry never before located, the work force is highly independent because the people have never had to meet rigid time responsibilities. In these areas, absenteeism and accident rates are high. There is also an unusually high absentee rate during crop-picking time. It will take a number of years before these people are formed into an industry-oriented group.

—Family Problems

Care of the children of female workers presents another problem. The majority of female mill personnel are young mothers. Many of these women hire housekeepers to care for the children while they work at the mill; but if the housekeeper is absent, the worker usually has to miss a day's work.

—Competition for Male Labor

Some mills cannot get satisfactory labor when other industries move in. One worsted mill is having trouble finding qualified men to train for supervisory positions since another industry in the area drained off all surplus male labor. The same company is having no difficulty finding qualified women to work.

—Imported Labor

Key men brought in from another area are sometimes another source of trouble to the new operation. Unless these employees are screened carefully, about 50% will be unhappy in the new area. The result is often detrimental to the best interests of the company.

The mill can minimize this situation by picking a site close enough to a city to allow the imported personnel to live there or visit conveniently. Also, small Southern towns usually accord the supervisory employee more esteem than he had in his previous location. This factor often does much to counter his dissatisfaction.

—Supplies

Another problem has been the lack of sources of supplies for woolen and worsted equipment. Nearly all this equipment is manufactured in the North, and until fairly recently many of the suppliers did not maintain satisfactory distribution in the South. In one instance a mill had to borrow enough spools from another mill to keep going until it could get a supply of its own.

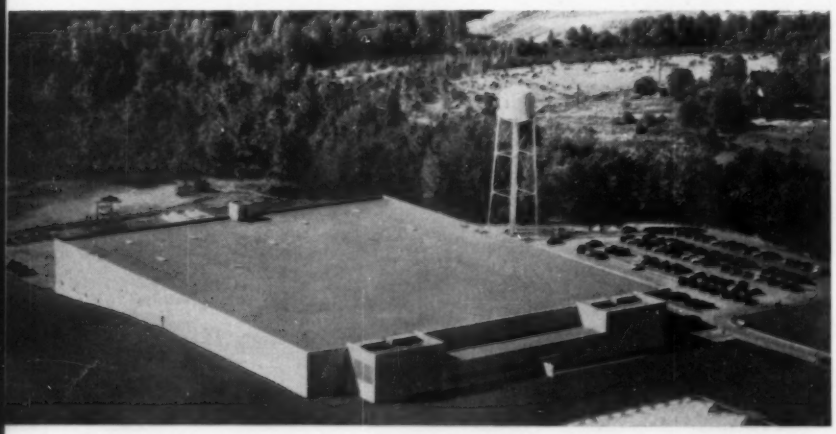
Although there has been much improvement in late years, many mills located in out-of-the-way places still find it necessary to carry a fairly heavy stock of supplies to guard against shutdowns.

—Training

A factor working against the new mill is the cost of training and loss of production. The salary of the potential operator, time spent by supervisors, and interest on capital invested and depreciation of equipment without full production makes training costly. It generally takes about three years to develop a permanent, trained work force.

Most of the new mills make only staple yarns and fabrics, avoiding fancy goods until the work force is well experienced. Also, they cannot afford to rush a production schedule. Such a rush almost inevitably ends up with a rash of defective goods and possibly a damaged reputation for the mill. The mills concentrate on quality first and then slowly bring up their production rates.

One mill recently had to re-evaluate its production acceleration. Too heavy a workload on its inexperienced personnel resulted in defective material. With a slowdown and retraining, it brought its material back up to par. Meanwhile, another plant making the same product has kept its quality high by maintaining a slow production-development rate and concentrating on quality.



HATCH MILL, Columbus, N. C., is a completely integrated plant built in 1952 to make men's and women's wool and wool-blend suitings.

New Mills Report on Conditions

A survey of a number of recently established mills in South Carolina indicated strong satisfaction with the area. Foremost among the praises were the cooperation of labor and the community. Most mills are bringing in a minimum force and hiring local workers for both labor and supervisory positions.

I. Wool-Combing Plant

Wellman Combing Co., a branch of Nichols & Co., Boston, Mass., began operations in Johnsonville, S. C., in Oct., 1954. Built and started up in nine months, the $2,500,000 commission top-combing mill today ships all the top it makes to Southern producers.

Johnsonville, on the coastal plain of South Carolina, was chosen as the site because it is close to the new wool port of Charleston, S. C., and to Wellman's principal customers. There are also excellent water facilities for waste disposal, and the area is not industrialized.

Eight men came down from the company's plant in Providence to start the new operation. The mill had 3,500 applications for jobs, an ample supply over the 400 present employees. These people had had very little cash up to the time they went to work for Wellman. They generally raised their crops on credit and had little left after they paid their debts. They live in their own homes, scattered on farms.

Formal Training Program Used

Wellman used a formal training program to break in enough employees to run two shifts. The mill then gradually broke in new employees for full operations. Walter H. Robinson, manager of the mill, has found the people readily adaptable to the new type of work. It took about a year to get the present steady working force.

Men never before employed in a textile mill were trained as section men and machine operators. Some of these employees are now shift foremen. The mill used the Barnes Textile Associates accelerated training course and is now giving a more-detailed course to section hands and overseers as part of a retraining program.

The mill is not unionized, and prospects for unionization in the near future are dim. The lack of a mill village and a common meeting place makes it hard to reach the workers. The favorable community attitude and the independence of the people also resist unionization.

Most of the raw wool comes through the port of Charleston; the rest comes from the West by train. The mill buys all the wool grown in South Carolina because Arthur O. Wellman, president, is sponsoring a sheep-raising project in the state.

The new building has eliminated substantial maintenance costs, and there have been savings in fuel over the New England operations because of the warmer weather. Air-conditioning requirements, however, are higher; but since conditions must be maintained for processing the balance stands in the new mill's favor.

The cost of power, transportation of wool and top, and the tax rate have been lower in the new location than at the company's Northern plant. The mill has been pleased with the help given by the State Development Board and by the state and local governments.

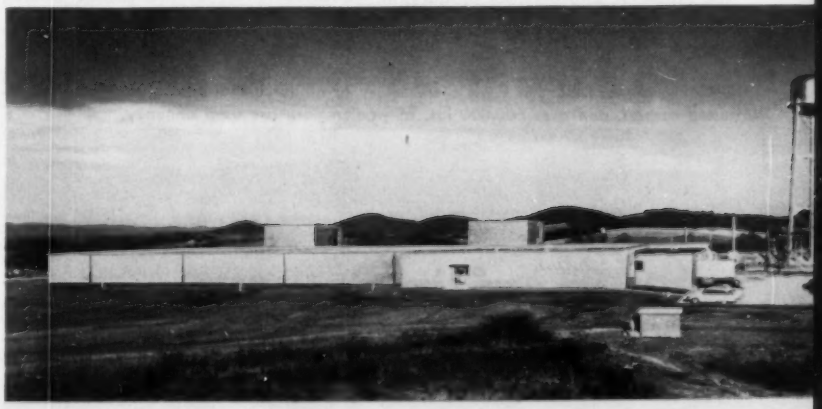
Suppliers Are Adequate

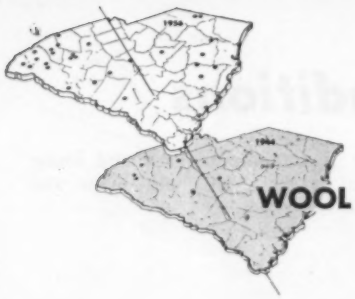
Badly needed machine-shop work is done by a shop in Sumter. Although general mill suppliers are scarce, the mill-supply houses are now increasing their stocks and easing the situation. But it still takes 14 days to get parts from machine builders.

Wellman management is confident that the unindustrialized areas of the South, the cooperative attitude of labor, and the existence of two combing plants will hasten the development of Southern worsted mills.

WELLMAN COMBING CO., Johnsonville, S. C., was completed in Oct., 1954. This $2½-million plant produces wool tops for the South's new worsted mills.

RUNNYMEDE CORP., Pickens, S. C., is a division of Kent Mfg. Co. This worsted-yarn mill, completed in 1954, covers 55,000 sq. ft. and cost nearly $1-million.





WOOL MOVES SOUTH

II. French-Worsted-Yarn Mill

A bad labor situation in its Northern plant caused Runnymede Corp. of Kent Mfg. Co. to move its French-worsted-spinning mill to a Southern location. The mill ran an experimental unit for seven years in a different section of the state to determine the feasibility of building a new mill.

The company worked with the S. C. State Development Board to set up the experimental operation. Seeing the advantages of building a new mill, the management picked as the site for the mill an area just outside Pickens, S. C., about 15 mi. from Greenville. The city offers the workers a place to live and has adequate transportation facilities.

Four Key Men Used

Four employees came down from the Pennsylvania operation to start the new mill. They arrived in July, 1954, and the delivery of equipment started in September.

The training program started with a nucleus of two or three easily adaptable workers for each operation. They learned through demonstrations and practice until they had mastered their jobs. Then new operators learned their jobs by working with the employees in the nucleus. Most of the mill's employees live on farms.

Runnymede tries to get workers without previous textile experience and brings its foremen up through the ranks. It improved its production rate slowly, concentrating on quality. For example, the mill lets creels run out instead of piecing up with the material in motion. Spindle speeds are also relatively low. Supervisors periodically check on the progress of the operators.

Manager Pleased With Progress

Warren T. Kent, manager of the mill, estimates that it will take three years to reach full production. He is pleased with progress so far. He finds especially advantageous the fact that jobs can be dovetailed, a situation impossible at the old mill. Fringe benefits are low, although they match conditions in the area. These factors, combined with lower wage rates, have brought costs down.

Taxes cost the mill about the same amount as in Pennsylvania. There have also been small savings in fuel and power costs. The mill ships by truck.

The move, according to Mr. Kent, is paying off. He is well pleased with the attitude of the workers in the community. Although first costs have been high, he feels he is in an area advantageous to worsted production.

III. Carpet Mill

Although a tufted-carpet mill such as Dixiana Mills in Dillon, S. C., is not strictly a woolen operation, it does use over 600,000 lbs. of woolen yarn annually.

Dixiana is a wholly owned subsidiary of Mohasco Industries and produces for both the Mohawk and the Alexander Smith divisions. Woolen yarn used at the mill comes from the Mohawk mill in Amsterdam, N. Y.

Reasons for establishing in Dillon given by Robert J. Saunders, president of Dixiana, are: (1) to be close to tufting mills, although not in their midst; (2) to be close to the tufting-equipment manufacturers in Chattanooga, Tenn.; and (3) to be close to the manufacturers of carpet backing and latex backsizing.

Existing Mill Bought

In 1953, Dixiana bought out an existing carpet mill in Laurinburg, N. C. Instead of trying to modernize an old structure, the company built the new mill in Dillon. The new unit went into production in September, 1954. Up to now, the mill has been expanded twice and now covers 200,000 sq. ft.

The mill has had excellent cooperation from the State Development Board of South Carolina. It also used the services of Atlantic Coast Line Railroad, Carolina Power & Light Co., and the local chamber of commerce and its subcommittee. The help given by these organizations relieved Dixiana of many of the troubles inherent in starting a new operation.

Five people came down from Mohawk's Northern operation to start the new plant. Four machines were in operation in Laurinburg before the new mill was built. The machine operators from Laurinburg acted as the nucleus to train the new workers. All new labor is obtained from Dillon County.

Employees Learned Quickly

The labor force has learned quickly; 13 weeks is the average training period. Dixiana used on-the-job training, with the work laid out in detail, step by step. Foremen keep a close check on trainees during the training period. The plant is now running three shifts.

Although the mill is stocking a little more supplies than usual, it can get almost any repair parts from shops and suppliers in Charlotte, N. C. Usually the suppliers go a little out of their way to keep the mill satisfied.

Absenteeism at Dixiana Mills has been very low, and quality products are being produced. The president of the mill believes that the excellent labor market and the traditionally conservative government in South Carolina will draw more woolen and worsted mills into the area.

DIXIANA MILLS, Dillon, S. C., is a subsidiary of Mohasco Industries. The mill produces tufted carpets, and over 600,000 lbs. of woolen yarn are used annually.

What the Future Holds

If the rate of growth for the last six years continues in the South and the rate of decline in New England continues, the South will become the country's largest woolen and worsted area by the end of 1960. From 1949 to 1955, the South gained spindles at the rate of 9% a year (54% total) and New England lost them at a rate of 9½% a year (57% total). Woolen and worsted looms changed climates in about the same proportions.

The modern wool-combing mills close to Charleston will give impetus to worsted-spinning growth in the Southern states. The Wellman and Prouvost plants are turning out well over 300,000 lbs. of top weekly. Top-dyeing facilities are now available in Sumter, S. C.

Port Activity

The expansion of Charleston as a port for wool is also an important factor. Last year, Charleston received 51,000 bales of wool and the outlook for 1956 is 100,000 bales. Leaders in the field have predicted that Charleston will become the hub of the new Southern wool business and perhaps of the country.

Activity taking place in Charleston is also conducive to the growth of wool in the area. A 16-man council has been appointed to help plan port development and expansion of dock facilities. North Charleston, where most of the wool is received, has 744,000 sq. ft. of sprinkler-protected warehouse space with concrete floors and tile walls.

Carpet Mills

The number of new carpet mills moving into the area will tend to increase spinning activity in the Southeast. The Alexander Smith velvet-weaving mill in Liberty, S. C.; Bigelow Sanford in Summerville, Ga., and Landrum, S. C.; Karagheusian in Albany, Ga.; and Roxbury Carpet in Tennessee are all indicative of increased woolen activity in the Southern states.

Garment Plants

Garment manufacturers have increased 30% from 1949 to 1952 in South Carolina, and the trend is continuing. Knitwear manufacture is also growing in the area. Some of these manufacturers provide a ready market for woolen and worsted yarns and fabrics.

Merchandising

Modern merchandising techniques are getting more attention from worsted and woolen manufacturers. This factor should also increase activity in an area where the rule has been to throw off the inflexible rules imposed by tradition.

Labor and Management

The mills that have already moved into the Southeast generally have a modern, enlightened management. Management tries to maintain as close contact with labor as possible. Closeness between employer and employee will have much to do with preventing further unionization in the area. Segregation in the region is also a block to unions.

However, a factor tending to slow

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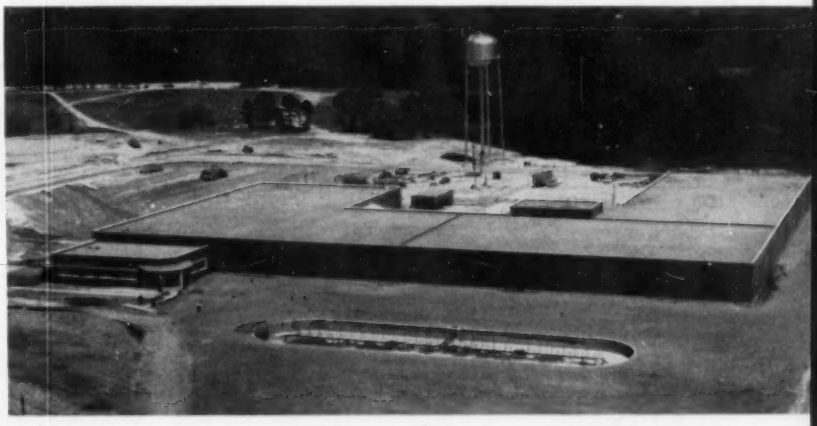
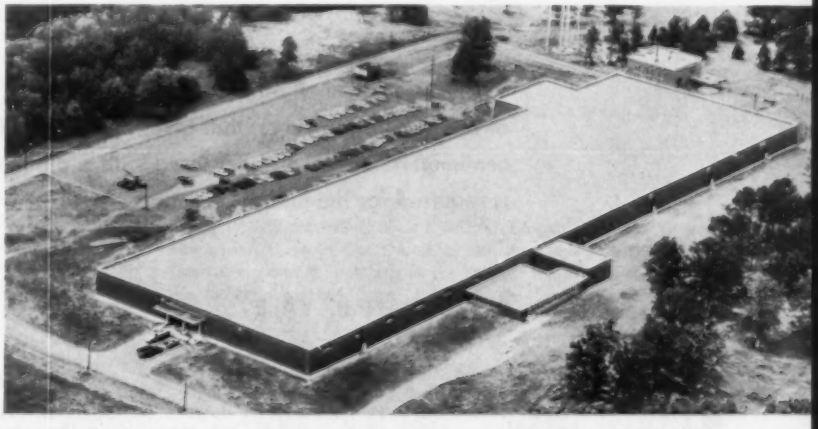
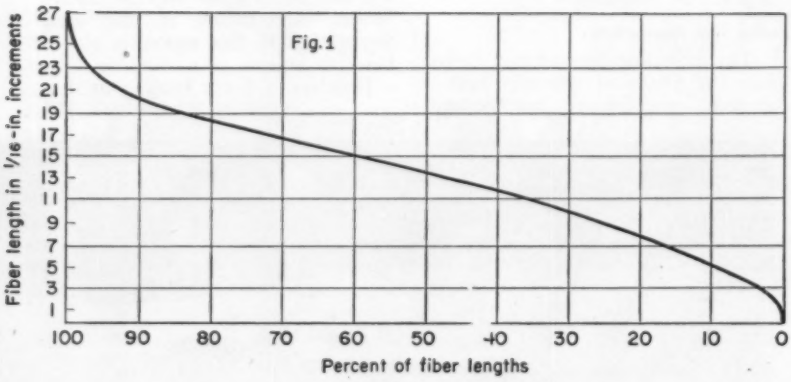


ALBANY FELT CO.'s $2-million plant at St. Stephen, S. C., was opened in May, 1956. This plant produces felts for the paper industry.



F. C. HUYCK & SONS, Aliceville, Ala., produces woolen textile materials, including paper-machine felts. Built at a cost of $3½-million, this plant covers 300,000 sq. ft.

PINE TREE CO., Dahlonega, Ga., makes carpet yarn. Built in 1955, this 40,000-sq.-ft. building is already having an addition built that will double its size.



FIBER-LENGTH DISTRIBUTION DIAGRAM. Percent of fiber lengths in 1/16-in. increments is plotted from data obtained by following procedures illustrated in Figs. 2 and 3.

Quick Way To Determine FIBER-LENGTH Distribution

• Here's a new method of cotton-fiber analysis, based on a geometric study of the Fibrograph curve, that gives unit-length distribution in either inches or centimeters. Areas are measured with a planimeter, and only 2 to 10 mins. is required for the entire operation.

By JORDAN P. YALE

COTTON-FIBER LENGTH DISTRIBUTION can now be determined in 2 to 10 mins., based on a geometric analysis of the Fibrograph curve.

The Fibrograph curve used in the analysis described here is obtained by following the sequence of operations outlined in the Servo-Fibrograph instruction manual. The only deviation from the procedure is in the preparation of the sample. Although the manufacturer suggests a ½-oz. sample, a 10-grain sample with approximately 5 grains in every comb gives very accurate and consistent results.

The curve described by the Fibrograph is shown in Fig. 2, Chart A. The determination of the mean and upper-half mean lengths from this curve is a known quantity; however, if you are interested in determining the fiber-length frequency distribution, proceed as follows:

Step One

Draw a tangent to point a on the Fibrograph curve on Chart A. Extend the base axis to intersect the tangent at *b* on Chart B. The curve described by *bc* on Chart B is equivalent to the linear density of the fibers tested. Therefore, the area described by *bcd* contains all the fiber lengths present in the cotton staple. These fiber lengths vary from zero at *d* to the maximum length at *c*.

Step Two

To determine what percent of fibers in the staple are below a certain length, say $\frac{7}{16}$ in. (index), measure $\frac{7}{16}$ in. on the length axis on Chart C. From this point, draw a line parallel to the base axis until it crosses the Fibrograph curve at *e*. Then, from the intersection, draw a line parallel to the length axis until it crosses the zero line at *f*. The $\frac{7}{16}$-in. index is equivalent to the area *bef*.

The ratio of the area *bef* to the total fiber length area *bcd* gives the required length index, in this instance the $\frac{7}{16}$-in. index. The measurement of areas is done with a planimeter. The same procedure is followed for all length indexes analyzed.

If you desire to find out what percentage of fibers in a given staple length are between two given group lengths, for instance between $\frac{3}{8}$ in. and $\frac{1}{2}$ in., subtract the $\frac{3}{8}$-in. index area from the $\frac{1}{2}$-in. area; the difference represents the area of fibers longer than $\frac{3}{8}$-in. but shorter than $\frac{1}{2}$-in.

Step Three

Following this principle, a complete fiber-length analysis of a cotton sample can be made within the limits of the Fibrograph curve, as shown in Fig. 3. The length and area columns in the table are obtained by direct reading, while the area percent column is obtained by dividing the corresponding length areas by the total area and multiplying the result by 100. The ratio obtained indicates the percent of fibers to corresponding lengths. For example, 5.9% of the fibers have a length longer than $\frac{7}{16}$ in. but shorter than $\frac{1}{2}$ in.

The cumulative percent column is obtained by adding in sequence all the percentages corresponding to the various fiber lengths. The cumulative percent represents the total percent of fibers having a length up to a certain point. To illustrate, the cumulative percent for $\frac{7}{16}$ in. is 16.3%, which means that there are 16.3% fibers in the staple with a length from zero to $\frac{7}{16}$ in., or there are 83.7% fibers with a length of $\frac{7}{16}$ to $1\frac{1}{16}$ ins. The staple diagram shown in Chart D is based on the cumulative percent.

Time for Analysis Varies

The time required for a length analysis varies according to the information desired. For instance, if you want only a length index, this analysis should take from 2 to 4 mins. However, if you desire an analysis, such as in Fig. 3, the procedure might take 10 mins. or more.

A great time saver is to use cards with printed lines, as illustrated in Fig. 1. The distance between the lines can be $\frac{1}{16}$ in., $\frac{1}{8}$ in., 0.1 cm., or 0.2 cm. Such cards eliminate the need to draw a line every time a test is made.

The main advantage of this method is the fact that it takes only a few minutes to get the fiber-length distribution. Another important point is the flexibility of results; fiber-length distribution can be shown in any unit-length desired, in inches or centimeters.

The Fibrograph curve is an automatic measurement of the Servo-Fibrograph; so the test data are free from human bias. However, errors may occur in the use of the planimeter or in drawing the straight lines. Such errors can be corrected with training and experience, and properly trained operators are essential.

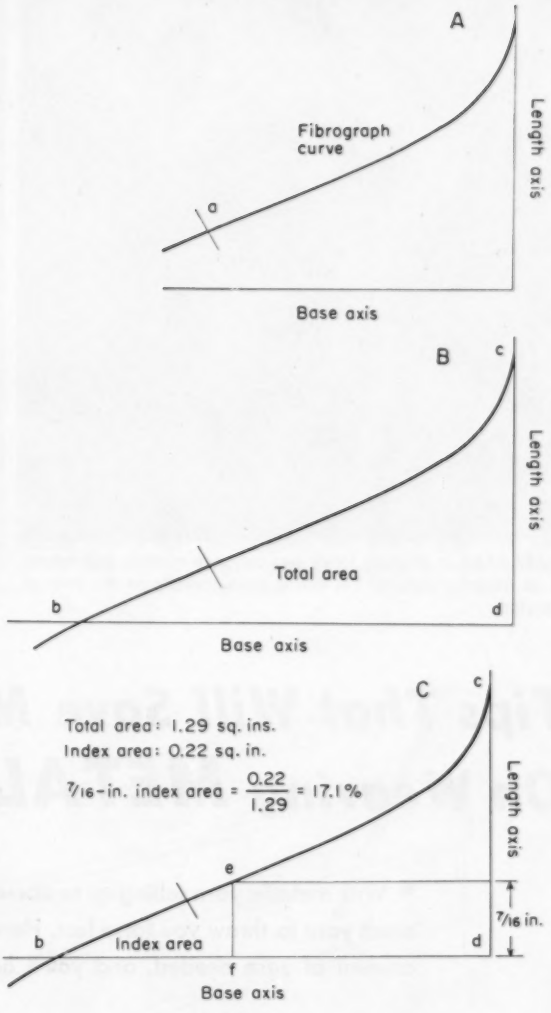


Fig. 2

STEPS IN DETERMINING INDEX AREA. Tangent is drawn to the Fibrograph curve in Chart A at *a*, and the curve is extended in Chart B to point *b*. In Chart C, the ratio of the index area *bef* to the total fiber-length area *bcd* gives the length index, in this instance 7/16 in.

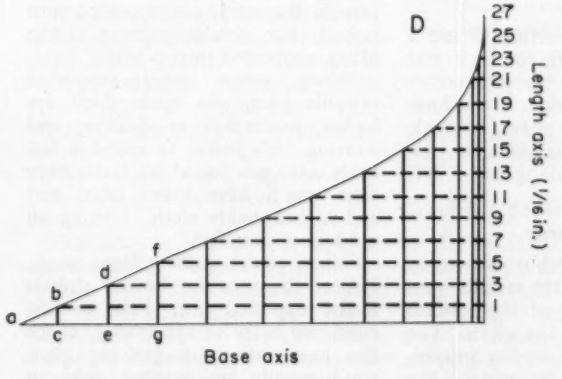
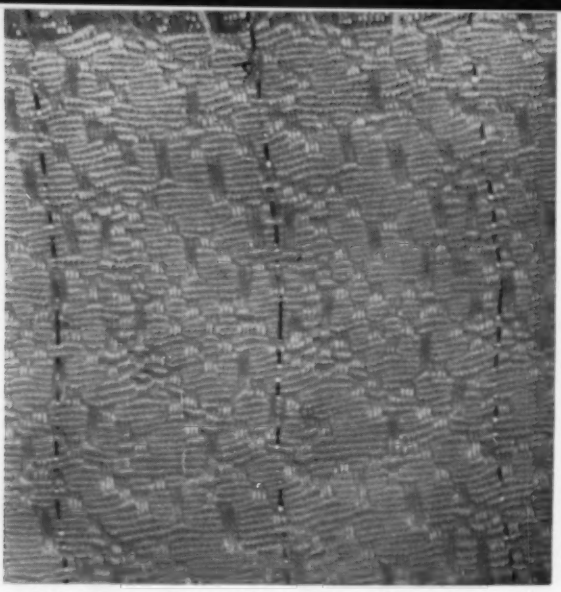


Fig. 3

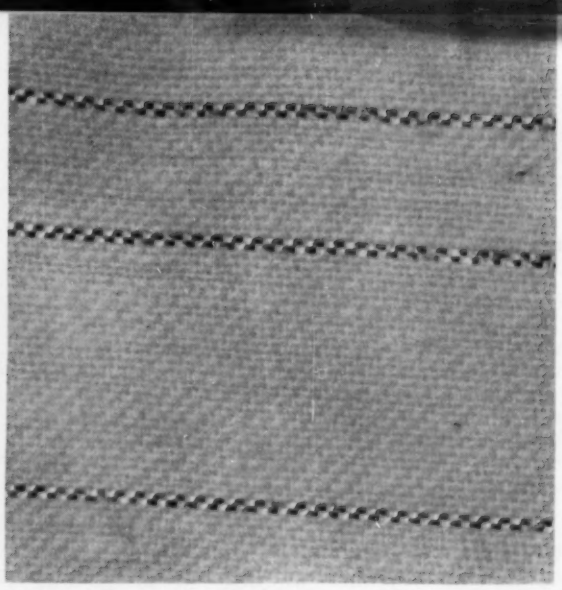
Fiber length (in $\frac{1}{16}$ in.)	Fiber length areas (sq. ins.)	Percent of fibers in each area	Cumulative percent
1 ($\frac{1}{16}$ in.)	0.01 (abc)	0.7 (%)	0.7(%)
3	0.04 (cbde)	3.0	3.7
5	0.08	5.9	9.6
7	0.09	6.7	16.3
9	0.15	11.1	27.4
11	0.12	8.9	36.3
13	0.21	15.6	51.9
15	0.16	11.9	63.8
17	0.13	9.6	73.4
19	0.15	11.1	84.5
21	0.12	8.9	93.4
23	0.05	3.7	97.1
25	0.03	2.2	99.3
27	0.01	0.7	100.0
	1.35*	100.0*	

*These figures are rounded.

FIBER-LENGTH DISTRIBUTION. Completed analysis is shown in Chart D. In the accompanying table, length and area columns are obtained by direct reading. The area and cumulative percent columns are calculated mathematically, as explained in the text.



WARP YARN in drapery fabric has only one metallic end woven in an irregular pattern. The end is almost wholly on the face of the cloth.



FILLING YARN is woven into the tabby-weave fabric as mispicks. The result is greater luster on the face of the cloth with less metallic yarn.

Tips That Will Save Money On Weaving METALLIC YARN

• With metallic yarn selling up to about $5 a pound, you don't have to waste much yarn to throw you for a loss. Here are several tips that will reduce the amount of yarn needed, and you'll have fabrics with better appearance.

By ALBERT FRANTZ

THERE ARE MANY PROBLEMS in weaving metallic yarns for anyone who has not woven them before. Often an interesting and desirable weave is designed; later, costs are way out of line and the fabric cannot be sold at a profit.

To weave metallic yarn at the lowest possible cost, it's necessary to place as few ends as possible in the cloth. The drapery fabric shown in Photo No. 1 illustrates three cost-saving practices:

1. The usual method for putting stripes in the warp is to use two ends of metallic yarn. The swatch in the photograph has only one metallic end, and therefore the cost of the metallic yarn is cut in half and the results are better.

2. Usually the metallic stripe is made with a tabby weave that requires two or more warp ends to show up satisfactorily. The weave shown has a float or skip weave in a haphazard manner. Therefore the full luster and beauty of the metallic yarn is brought out.

3. It's common practice to use a separate harness shaft for each end of metallic yarn, and the yarn comes off a separate yarn beam. On a four- or six-harness tabby weave, a single harness shaft for the metallic yarn has advantages by calling for a 2x1, 3x1, or 4x1 lift.

Use Irregular Patterns

However, on a dobby weave, as shown in the swatch, the metallic yarn has no exact repeat of the pattern the entire width of the cloth. The ground-weave pattern repeats approximately every $\frac{3}{4}$ in. By spacing the metallic yarn ends $\frac{7}{8}$ or 1 in. apart and placing each heddle on a different ground-weave harness shaft, no two metallic ends appear in an exact ground-beam pattern repeat throughout the entire width of the cloth.

For unusual patterns with metallic yarn in the warp, nonsupported yarn is best. For metallic patterns in the filling, supported yarn is best.

When you're using supported metallic yarn, use fresh stock for higher production in quilling and weaving. It's better to spend a few cents more per pound for first-quality yarn—you'll have lower labor cost and higher-quality cloth. Use up all old lots of yarn first.

When you're quilling from cones, inspect the yarn for broken strands in the supported yarn. If the metallic cones are fuzzy in appearance, check the yarn with a magnifying glass; you'll usually find cracked, split, or broken filaments. In quilling, the fuzziness passes on to the bobbin quilled; and during weaving, split picks and broken picks are common.

Don't Use Poor Yarn

Broken supporting yarn often gathers into slub-like lumps from one-fourth to several inches long. These lumps pull through the shuttle tensions and weave into slubs throughout the cloth.

If poor-quality yarn is used, production planning may as well be discarded because loom downtime will be great.

When the finer metallic yarn is used, use opossum fur in the shuttle. Use little, if any, tension on the eye pads. Then the yarn will flow off the quill freely; the fur tensions the yarn sufficiently to prevent kinks.

In weaving, strain can be taken off the selvages by bouncing the shuttle during checking. Only an experienced loomfixer with keen eyesight and judgment can handle this fixing trick; learner loomfixers are likely to make rough cloth.

Tips for Higher Luster

Metallic yarn in the filling can be given higher luster on two, four, or six picks by using a skip or mispick on the metallic picks, as shown in Photo No. 2. On a tabby weave of, say, a four-shaft two-up and two-down pattern, call the metallic shafts one up and three down. This arrangement brings the fuller luster to the face side of the weave, as shown in Photo No. 2.

Some weaves have as few as two stripes of metallic ends in the warp; one strand may be several inches from each selvage, or perhaps both stripes are on only one edge of the cloth. These metallic ends usually come from one or two loom bobbins of filling hung at the back of the warp. One good method of mounting a single bobbin of filling is shown in Fig. 1.

Use a Homemade Creel

The mounting wire is made from a broken top harness wire bent to the shape shown in Fig. 1. The wire is hung by slipping the upper loops over another wire or a heavy cord stretched from one back loomside to the other.

The metallic end is tensioned by a small piece of felt placed under the bobbin.

This setup is excellent for making samples quickly. As many as 20 metallic ends can be handled easily in this way. If the ends needed in a fabric are reduced or if they are eliminated entirely, the bobbins can be transferred to other looms or stored for future use.

Where metallic stripes are close together in continuous runs, use nonsupported yarn. Fig. 2 shows a creel to run the ends from small bobbins. The creel is made from five-ply hardwood.

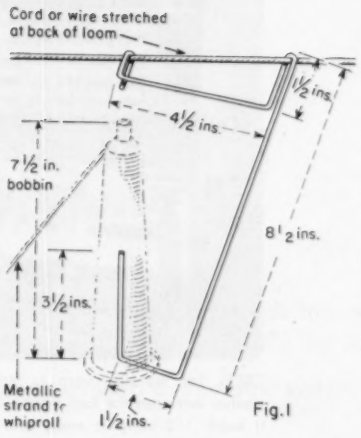


Fig. 1

CREEL for single metallic end is made from a discarded top harness wire. A filling bobbin is placed on the wire over a felt pad that adds friction.

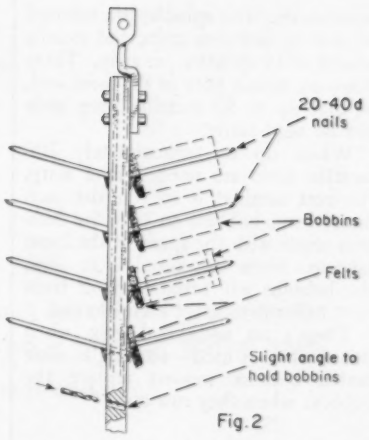


Fig. 2

MULTICREEL is made from a hardwood board spiked with nails on each side. Filling bobbins are placed on each side of the board.

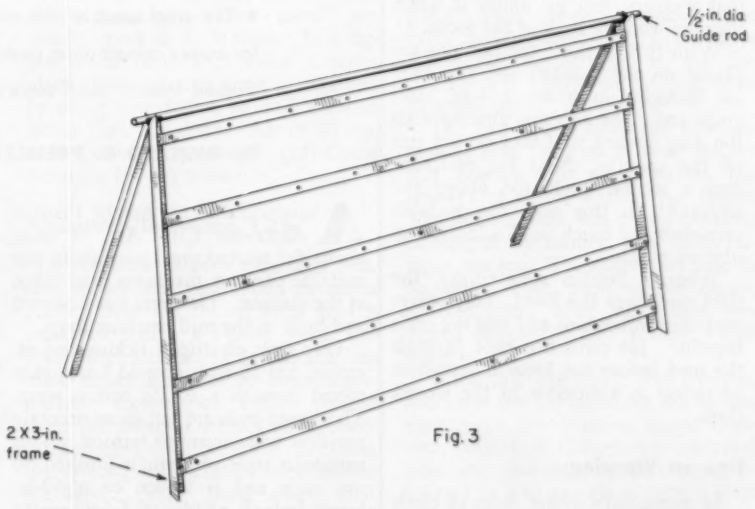


Fig. 3

200 ENDS of metallic yarn are mounted on this creel placed back of the loom yarn beam. Steel guide rods add friction to the yarn ends.

Creel for Several Ends

The spindles are 20- or 40-penny nails set so that the full bobbins are approximately ¼ in. apart. The holes for the nails are drilled on a slant and are slightly undersize. The nails are oiled before they're driven through the board.

Nails are driven from each side of the board so that bobbins can be run on both sides. A piece of felt is used to separate each bobbin from the hardwood and to add friction to the yarn. If more friction is required, a cut steel washer is placed on the nail over the bobbin.

The creel is bolted to the back loom arch with a piece of strap iron given a half twist and is placed so that the metallic yarn feeds off without abrading adjoining bobbins.

Use an Old-Time Silk Creel

Another form of bobbin holder can be made from old-type silk-creel spindles. Many of these spindles are available at used machinery dealers'

warehouses. The spindles are inserted in steel or cast-iron strips and usually have 8 to 10 spindles per strip. These strips are bolted back of the loom arch so that up to 50 metallic warp ends can be held easily.

When up to approximately 200 metallic ends are needed in a warp, the best method is to run the yarn direct from bobbins so that the bobbins rotate with the speed of the loom take-up. Since this speed is so slow, the bobbins will often feed off from start to finish without a broken end.

There's an additional gain when this method is used—warping is eliminated because weavers replace the bobbins when they run out.

Mount Creel on the Floor

A sketch of this creel is shown in Fig. 3. Discarded silk creels are used to make a small creel set back of the loom whiproll. If only a few bobbins are needed, the creel can be lowered to fit under the loom yarn beam so that weavers' feet go under it when they are working back of the loom.

With this method, the bobbins are placed on the spindles and the ends are brought up under a ½-in. steel guide rod. The bobbins unwind with the drag upward, and they do not run off the spindles. Next the end runs over a second guide rod above the whiproll. In this way, the metallic yarn does not touch or abrade the regular warp yarn.

When a bobbin runs empty, the slack end stops the loom. The weaver replaces the bobbins and ties the ends together. He pulls the knot through the reed before the loom is restarted; no defect is noticeable in the woven cloth.

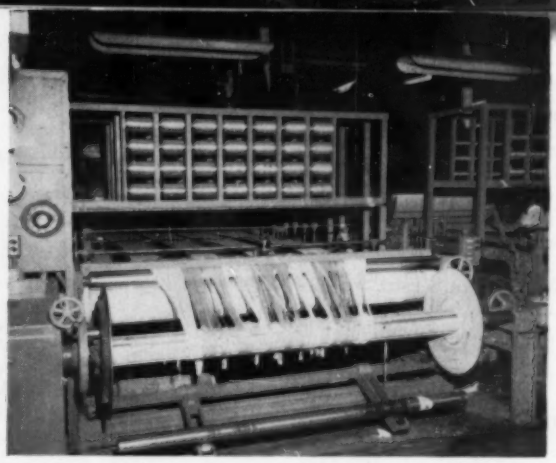
Tips on Warping

In many mills where styles of cloth require 100 to 200 metallic ends in the warp, the ends are put in at warping or beaming. A small number of ends is more difficult to warp than a larger number.

On approximately 100 ends, beaming paper spaced about 5 yds. apart helps weaving. Use as much warp tension as possible without breaking the ends. Use old paper because the sharp edges of new paper cut the metallic ends.

Keep the warp yardage as low as possible; long lengths of yarn loosen on the beam. A maximum of 400 yds. per beam is best.

Bent beam gudgeons cause many metallic-yarn breaks. Therefore you should test all empty beams for trueness before warps are beamed. And warps must be handled carefully between warping and the loom.



CREEL for metallic yarn is mounted on the two sides of the slasher between the last drying cylinder and the loom yarn beam. It holds 112 metallic ends, and the ends aren't slashed.

Here's a Neat Creel For METALLIC YARN

• The creel used at this mill to put metallic yarn in fancy ticking for better appearance could be used to add metallic yarn to any slashed fabric. And there's no limit on the number of ends.

By **RICHARD B. PRESSLEY**, Associate Editor, TEXTILE WORLD

AVONDALE MILLS' Bevelle Plant at Alexander City, Ala., is using about the neatest creel possible to put metallic yarn on the loom yarn beam at the slashers. The creel was designed and built in the mill machine shop.

One style of striped ticking, for example, has 70 ends of gold Lurex yarn mixed in with a 20.25s cotton warp. The Lurex ends are put in an accurate position with accurate tension. This particular style of cloth is finished 56 ins. wide and is woven on a 60-in. loom, but all widths of fabric up to 72 ins. are woven with the metallic ends put in with the creel.

Puts in Hundreds of Ends

As the creels are now made, any number of metallic ends from one up to 112 can be put in a warp. There are four banks of spools with 28 spools in each bank. By adding more banks of spools, several hundred metallic ends could be put in.

The upright, crosswise, and lengthwise members of the frame for the creel are made from 2-in. angle iron welded together. The upright members are fastened to the slasher frame between the last drying cylinder and the loom yarn beam.

Upright stands to hold the spools of yarn are made of wood and are bridged into the angle-iron frame. The wood pieces are slotted diagonally from the back to the center to hold ⅜-in. pins the spools are mounted on.

To put in a full spool, the empty spool is simply lifted out with the pin; then a full spool is slipped over the pin and set in the diagonal grooves.

Yarn Runs Out Warp Set

Enough yarn is put on the spools to run out a complete warp set.

From the spools, the ends of metallic yarn go down, around a stainless-steel guide rod, through an eyelet, and then into the slashed warp. In this way, proper tension is put on each end.

Because the metallic ends are put in the warp after the warp is slashed, the metallic ends are not slashed.

The doffed warps are drawn in on a Barber-Colman drawing-in machine, and the metallic yarns are drawn in along with the cotton or rayon ends.

The warps are woven without trouble at the looms: (1) since the tension is correct on every end, there are no false stops in weaving; (2) the ends do not run tight; (3) because the metallic ends are uniformly placed in the warps, there are no tangled ends; and (4) the metallic ends are on top of cotton ends so that they weave on the face of the cloth for better appearance.

TEAM DOFFING
Pays Off in Spinning

- If you are now having spinning doffers work individually, you may be able to increase production 1 to 2% by using a two-man doffing team.
- Here's how to set up a doffer-team system that works.

By JACK ALLAN

If you're spinning 375,000 lbs. of yarn a week, two-man team doffing can increase your production by 3,000 to 4,000 lbs. weekly. Most mills converting to this system estimate the resulting production increase to be 1 to 2%. A team of doffers gets a frame started almost twice as fast as a single doffer.

Team doffing is a new wrinkle for most mills in the search for lower costs. The idea, however, is not new. Team doffing was used in the early 1900's under the old head-doffer system.

How and why are modern mills returning to this old system for greater production efficiency? New long-side, large-package frames are the reason for the revival. The new frames take too long to start under the single-doffer system.

With the team idea definitely established, mills are now applying the method to old as well as new frames. Production can be increased on existing equipment the same as on new, long frames.

The team method adds production to all ring sizes, as shown in the table. For example, on 16s warp spun on a 2¼-in. ring, the increase is 1%. The total production time saved per 140-hr. week is 81.8 mins. This figure means that 81.8 extra minutes of machine running time is obtained by using two doffers to doff a frame rather than one doffer. About 20 lbs. more yarn is produced per frame during a 140-hr. week.

Production Increased 2.2%

A check on 5s warp spun on a 3-in. ring shows that production increases 2.2%. Over 153 lbs. of extra yarn is produced during a 140-hr. week. Between the extremes of 5s and 16s, the table shows 10s warp to have a production increase of 1.4%. While these percentage increases are actually extra profits for the mills installing the system, they cannot be obtained overnight. Mills must plan their change-over carefully. Mills having made the change report no serious objections from the operators during and after the change-over. How did they avoid employee objection?

To begin with, the overseer in one mill first sold two doffers on the idea of working together. These two doffers were allowed to make some extra money from the new setup. There was no attempt to use the change as a pretext to increase work assignments.

The two doffers liked the new system because they made more money and because the setup halved the amount of actual doffing per frame. The doffing work was set up by sides instead of by frames, and doffer fatigue was less. The doffer was able to do easier work, such as piecing-up, starting, etc., after each side was doffed instead of first doffing a full frame.

With this beginning, the overseer had little trouble installing the system throughout the spinning room. However, the full change-over required time and planning. Doffers could be teamed only as quickly as extra doffers were found or trained. This mill reports that six months were required to change over fully to team doffing in a spinning room having approximately 30,000 spindles.

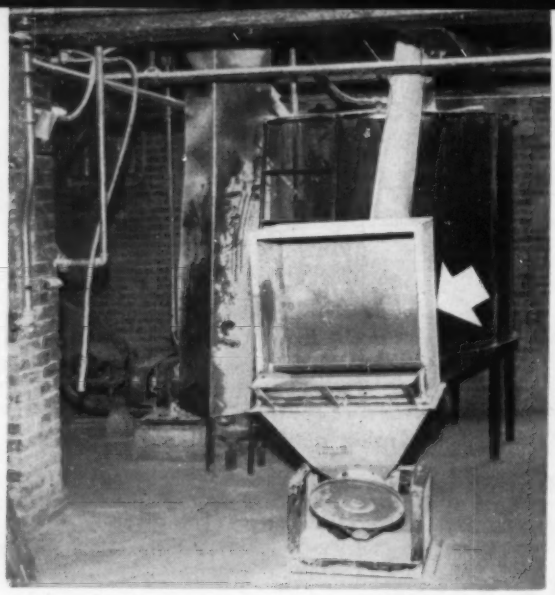
System Quickly Installed

Another mill with 50,000 spindles says that the system was installed in two months. A third mill reports that it was able to use teams almost instantaneously in one part of the spinning room but was seriously considering a continuance of the single-doffer system in the other part of the room because of the wide variation in yarn numbers.

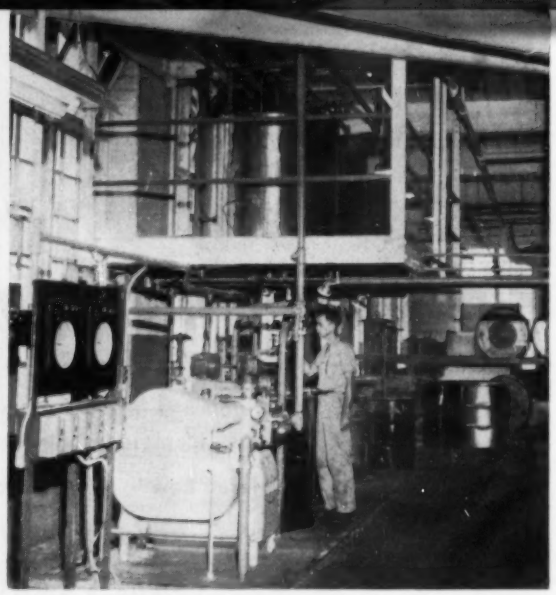
Team doffing appears to be a cinch for a 1 to 2% increase in production for those mills having a few extra doffers and not spinning too great a variety of yarn numbers.

Team vs. Individual Doffing Efficiency

	Frame stops (mins.)		Time saved per doff (mins.)	No. doffs per frame (140 hrs.)	Time saved in 140 hrs. (mins.)	Production increase (lbs.)	Production increase (%)
	Team	Individual					
16s warp (2¼-in. ring)	3.28	6.55	3.27	25	81.8	20	1.0
10s warp (2½-in. ring)	3.66	7.31	3.65	32	116.9	48	1.4
5s warp (3-in. ring)	4.16	8.31	4.15	43	178.5	153	2.2



SLURRY TANK holds 700 gals. of water and starch. Starch dumped in the hopper door (arrow) is mixed automatically.



HOMOGENIZER, stainless-steel size-cooking and storage kettles, and temperature controls prepare finished size from the slurry.

New SLASHING EQUIPMENT Saves Labor and Size

• An improved method of mixing size as cold slurry before it's cooked has cut out a lot of work in size making at Kendall's Mollohon Mill. New slashers, homogenizer, and other equipment have also cut the amount of size used.

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

MODERN EQUIPMENT installed in the slasher room of Kendall Cotton Mills' Mollohon Plant, Newberry, S. C., two years ago is resulting in constant slashing improvements.

The latest improvement is a 22% reduction in sizing materials used, and it was started only eight months ago.

The new system is also reducing starch costs 60¢ per 100 lbs. by permitting pearl starch to be used. One carload of starch (60,000 lbs.) is used every four weeks. Therefore the saving is $4,590 for a 51-week year.

The modern slashing equipment begins with a cold-slurry-mixing and storage tank designed by Mollohon's maintenance superintendent, A. W. Weigle. The tank is made from the copper cylinder of a discarded slasher and has a capacity of 700 gals. of slurry. It was fabricated from the slasher cylinder by a local metal shop. The tank is in the mill basement directly under the slasher room.

Slurry Mixing Takes Little Time

Starch is unloaded from boxcars and trucked directly to a storage area in the slurry-mixing room. As a result, it's handled only once before it's dumped into a hopper.

Bags of pearl starch of approximately 100 lbs. each are opened and dumped into a hopper where they're moved automatically into the slurry tank from the top. The hopper has a door 3 ft. from the floor where the starch is dumped. Starch is stored near the tank, and an employee moves the bags of starch to the hopper on a truck with a top level with the hopper door. Consequently little lifting is done.

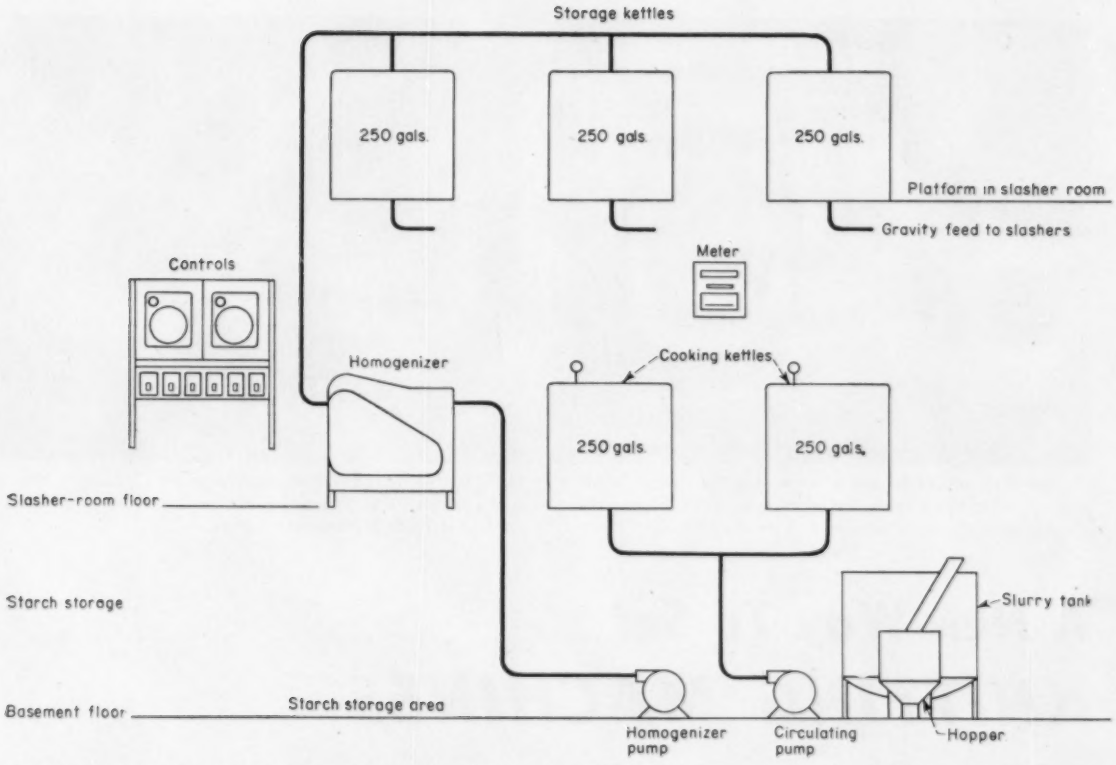
Water is fed to the tank in any predetermined amount, and 500 gals. of slurry are mixed at a time. The mix is 4 lbs. of starch to 1 gal. of water. Only one batch of slurry is mixed every 24 hrs.

A mechanical agitator is used to mix the slurry. In addition, a 2-hp. open-vane pump circulates the slurry. This pump is run continuously after the slurry is mixed to keep the solution uniform and free from bacteria attack.

When the slurry is mixed thoroughly, the mechanical agitator is stopped because the pump alone keeps the slurry in suspension. The pump also pumps the finished slurry to two cooking kettles overhead.

Size Making Is Automatic

To make the size, the slurry is pumped into a cooking kettle. Water is added for the particular formula, and this solution is heated to 175 to 180° F. with automatic Foxboro controls. Gum and compound are added, and the mixture is raised to 210° F. in 20 mins. It is held at 210° F. for 20 mins. and is then pumped to a Manton-Gaulin homogenizer.



EQUIPMENT for cooking size eliminates all manual work except dumping in starch, gum, and compound. Other mixing is automatic.

Four sizing formulas are used; all formulas finish at 216 gals. of size:

1. 31 gals. of slurry (99 lbs. of starch), 5½ lbs. of gum, and 4½ lbs. of compound.
2. 37 gals. of slurry (118 lbs. of starch), 8 lbs. of gum, and 6 lbs. of compound.
3. 51 gals. of slurry (163 lbs. of starch), 11½ lbs. of gum, and 10 lbs. of compound.
4. 59 gals. of slurry (188 lbs. of starch), 12½ lbs. of gum, and 12 lbs. of compound.

All four formulas are homogenized at 2,200 psi. The homogenized size is pumped to one of three storage kettles, where it is held at 210° F. The finished size is fed to the slashers by gravity.

The correct amount of slurry and water are added to the cooking kettles by setting a meter to the number of

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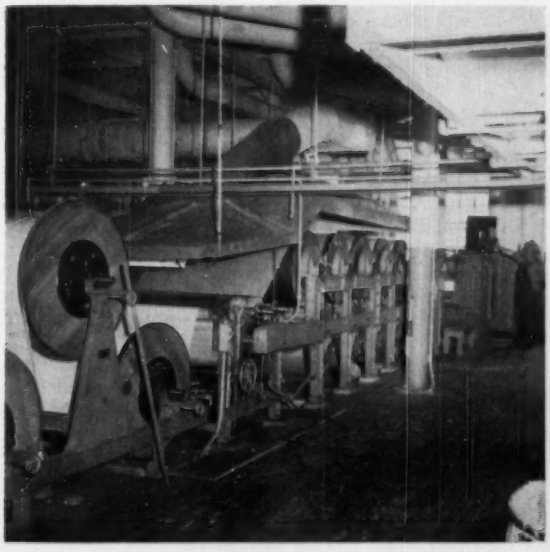
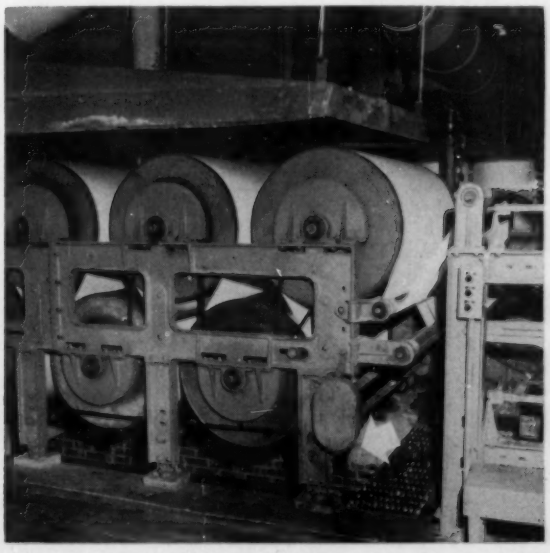
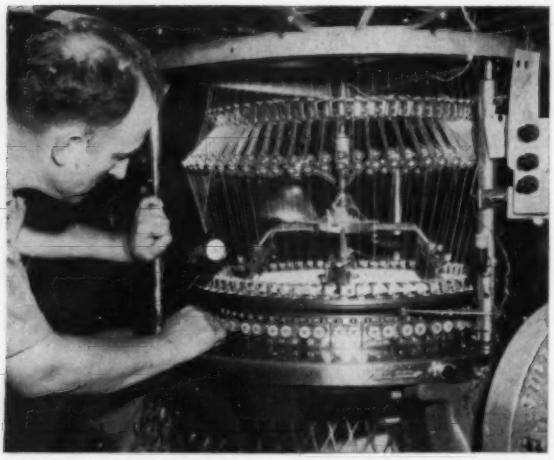


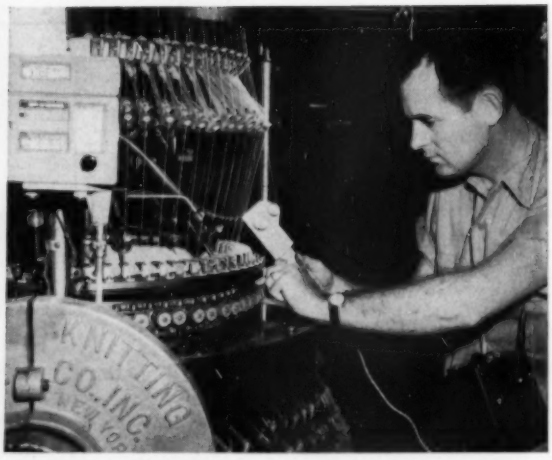
TWO-HEAD SLASHER operates at 75 to 95 yds. per min., depending on the warp. The slasher runs one beam on heavy work.



OPEN PIT (arrow) under slasher cylinders lets cylinders be washed down easily at week-end shutdowns. A hose is used for the job.



MECHANICAL METER is used to determine the correct length of yarn knitted at No. 1 feed. The machine is run for 10 revolutions, and the stitch cam is adjusted to knit standard fabric.



ELECTRONIC METER is then applied to No. 1 feed to find the speed of the yarn. The remaining feeds are then set to No. 1 feed. The result is more-even fabrics.

A New Way To Set KNITTING MACHINES

• P. H. Hanes Knitting Co., Winston-Salem, N. C., is setting up multifeed knitting machines to produce more-even fabrics than those produced under the old trial-and-error methods. Electronic and mechanical yarn-measuring instruments are used for the job.

By JAMES H. BLORE, Associate Editor, TEXTILE WORLD

SETTING UP circular multifeed knitting machines has always been a slow and tedious task. The biggest difficulty has been to level each stitch cam to draw an equal amount of yarn into each stitch. If cams are not set exactly level, uneven fabric is knitted.

The usual custom is to mark the yarns with an oily finger and turn the machine by hand until the marks reach the yarn carrier. The process is repeated until all the marks are level with the yarn carrier.

One of the weaknesses of this system is that knitting conditions are not the same when the machine runs under power. Different results are obtained, and machines set by the most-expert fixers often produce fabrics with horizontal streaks.

Course Variation Cut to 6%

Ravel tests at P. H. Hanes Knitting Co. showed that course-length variation from 64-feed machines ranged from 14% to 30% when knitting machines were adjusted by the old hand method. New electronic and mechanical instruments that measure yarn speed and yarn length have cut this variation to less than 6%.

P. H. Hanes overhauls knitting machines at regular intervals. These intervals depend on the number of rolls of cloth produced [see TEXTILE WORLD, Dec., '53, p. 96].

Latch-needle jersey machines are overhauled when about 1,400 rolls of cloth have been produced. The fixer who overhauls the machine also adjusts the stitches.

The Hamilton yarn-measuring device is the first instrument used to level the stitches. This meter measures the length of yarn knitted during 10 revolutions of the cylinder.

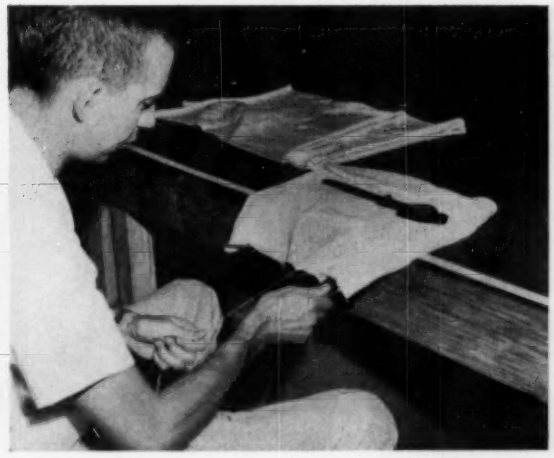
The correct meter reading for each machine is posted on the yarn-stand uprights of each machine. This reading depends on the quality of the fabric and is calculated from ravel tests.

The fixer tests No. 1 feed and adjusts this feed until the feed draws the correct amount of yarn. The Hamilton meter is placed on the bed plate of the knitting machine, and the yarn is run over the measuring wheels.

The machine is run for 10 revolutions, and the meter reading is checked. If the reading is low compared with the master reading, the stitch cam is lowered to pull more yarn into the stitch. If the reading is high, the stitch cam is raised. This procedure is repeated until the meter reading coincides with the master reading.

The Speedotex electronic instrument [see TEXTILE WORLD, July, '56, p. 132], which measures the speed of the yarn, is then used on this feed. The stroboscopic measuring unit of the instrument is held in the fixer's left hand while the calibrating unit is carried on a strap hung around the neck or over the shoulder.

An extension cord from the calibrating unit is plugged into the 110-v.



KNITTED FABRIC is prepared for a ravel test by cutting along the courses at an angle and pulling out ends starting from the peak. Time taken for a ravel test is about 15 mins.

RAVEL TEST is done on a long table, and the length of each course is recorded on a chart. Variation in course length has been cut below 6% with the new instruments.

outlet that serves the electric stop motions. The measuring unit is held over the yarn carrier, and the yarn from No. 1 feed is run over the tension wheel and over the measuring wheel.

The machine is started, and the yarn rotates the wheel. The calibrating unit is adjusted until a flashing lamp behind the pulley synchronizes with the pulley rotation and makes the hole in the wheel appear to be stationary.

Cams Moved While Machine Runs

Without further adjustment to the calibration, the measuring unit is moved to Feed No. 2, and the yarn from this feed is looped around the wheel. If the flashing lamp does not synchronize with the wheel, the stitch cam is adjusted while the machine is running until the hole in the pulley appears to be stationary.

This process is repeated on all feeds. The micrometer scale on the stitch-cam adjusting knob is then turned so that Fig. 1 on the scale reads at the top.

This adjustment is made for comparative purposes. If a stitch-cam adjustment slips, the correct feed can be easily recognized by comparing the scales.

About 30 mins. is required to do the complete job on a 64-feed machine. This time compares with less than 15 mins. for the old hand method of setting machines.

Besides the advantages of better cloth, however, the new method gives two other advantages. They are: (1) the machine runs continually after the first feed is set; so the machine's production time is not wasted; and (2) there are no dirty marks on the cloth, which resulted from the old method.

A machine is adjusted by the same method if the machine produces uneven cloth between overhauls. Some machines at P. H. Hanes have been found to hold the adjustments better than others.

Because of needle pressure on the stitch cams that forces them up and wear that occurs on the bottom of the cams, the fabric is invariably tighter before adjustment and the cams need to be pulled down.

After a machine has been adjusted, the next roll of fabric from the ma-

CONTINUED ON PAGE 188

RAVEL TEST

P. H. HANES KNITTING CO.

Date Sept. 26, '56

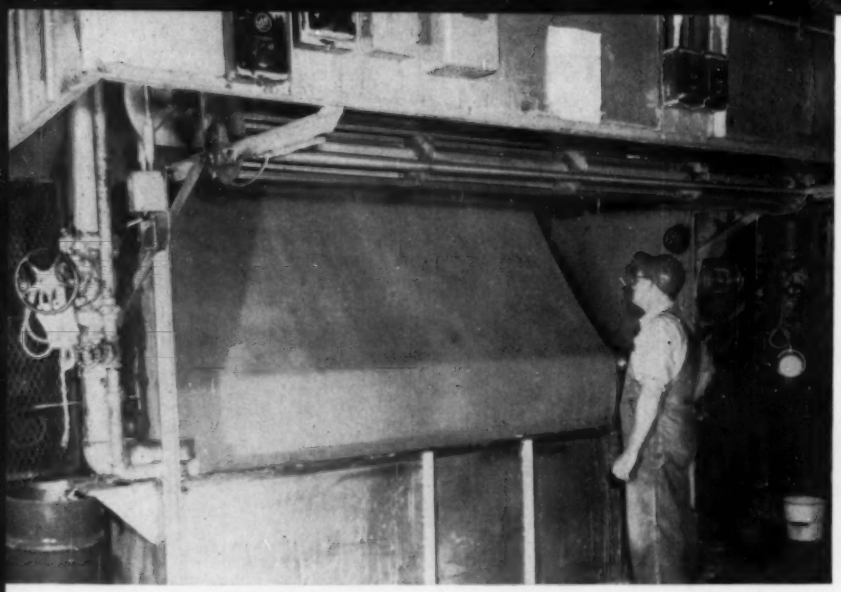
Test No. 260

Fabric Type	Cyl. Size Gauge or Cut		Draw		Course Count		Yarn Mfg. Yarn Size		Machine Make and Model		Machine No.							
FK 725	18 ins. 16 cut		133				Hanes 20/1 C.P.		Supreme		126							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	133	132	131	136	136	136	131	133	137	133	133	133	131	131	136	138	134	131
	131	134	138	136	131	131	133	132	131	136	136	131	136	133	137	133	133	131
	136	136	131	133	133	132	131	136	133	133	133	137	138	131	131	136	134	131
	133	132	134	133	136	133	133	134	132	133								

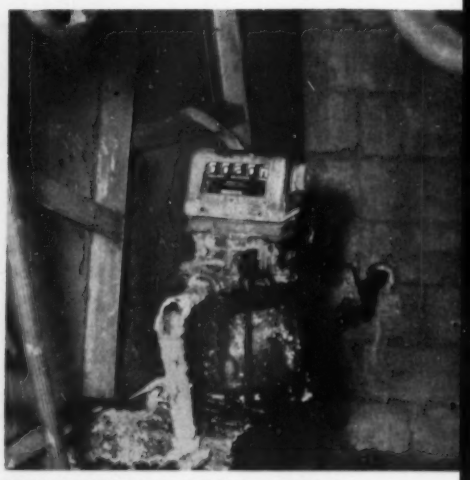
Low — High
131 — 138
Spread = 7 ins.
Average = 133.6

% Variation
$\frac{7}{133.6} = 5.2\%$

RAVEL TEST CHART is made for each roll of fabric from adjusted machines. The smallest ravel is subtracted from the largest and this figure is divided into the average to find the variation.



CARPETING IS DYED full width on these becks, equipped with conical breast rolls, divided at the center. Each half operates independently through a magnetic clutch actuated by a feeler that follows the carpeting selvage.



COMMON SALT is supplied in accurate quantities from these meters, one for each pair of becks. Saturated brine comes from a Lixator installation outside the dyehouse.

Balance Dyeing and Drying For Better TUFTED CARPETS

Half the battle in producing finished tufted carpets is getting the dyed goods dried promptly. Dalton Carpet Finishing Co., Dalton, Ga., found that plenty of drying capacity was the answer to—

- **Reduced seconds**
- **Smoother work flow**

By **ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

Dalton Carpet Finishing Co. changed its whole production picture when it installed an additional dryer in recent months. The principal problem was in drying yardage goods—the term for carpeting woven to finish at up 15 ft. and cut in lengths up to 300 ft. off the tufting machines. The dyeing equipment includes six 12-ft. stainless-steel becks, two 15-ft. becks, and one 9-ft. beck.

The production potential of this number of becks, particularly when direct colors are being run, can be realized by taking a look at a typical dyeing routine.

How Carpeting Is Dyed

The carpeting—up to 400 ft. per load—is loaded into a bath containing a penetrant, and the temperature is raised to 180° F. After running for 5 mins., cold water is turned on and the load cooled by overflowing to 120° F. The bath level is adjusted, and 10 gals. of a 35% salt solution is added and run 5 mins.

Then the basic formula of the dye is added and let run 10 mins. Another add of salt solution—this time 25 gals.—is run in and the load run for another 5 mins. at 120° F. Then a final add of 25 gals. of salt is added and the temperature run to 190° F.

After 25 to 30 mins. a patch is taken; and if the shade is OK the load is cooled by overflowing the beck with cold water.

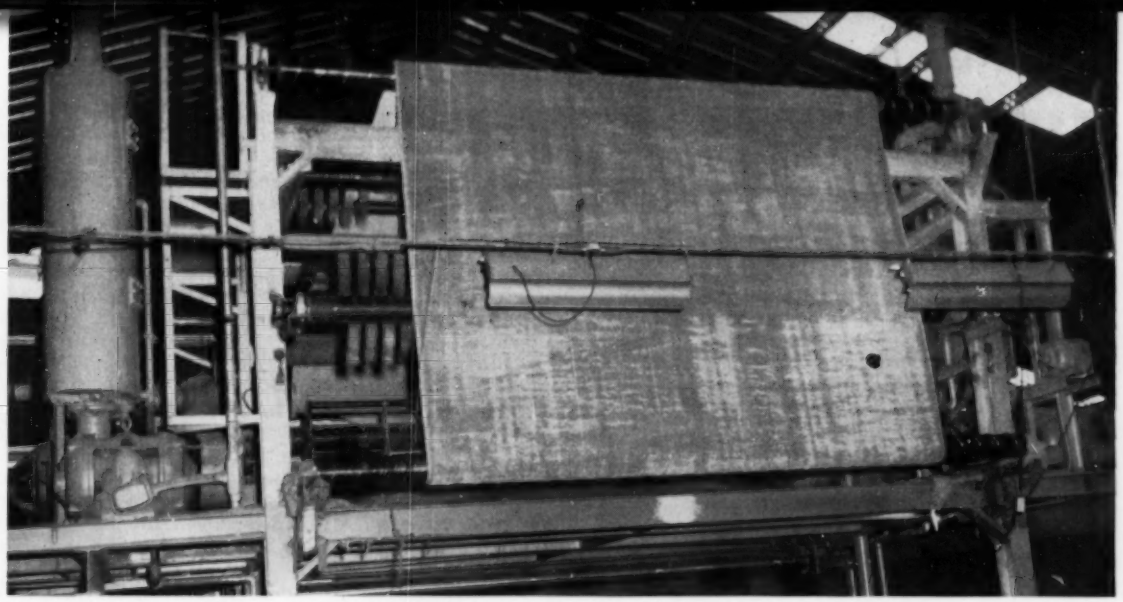
Any required finishing materials are added at this time. Total loading, dyeing, and unloading time can run as little as 2½ hrs.

Nylon-faced carpeting is generally dyed with neutral-dyeing metallized dyes of the Capracyl type. The goods are given a pretreatment at 190 to 200° F. with 2 to 3% owg. of Capracyl leveling salt and 2% owg. ammonia for 5 to 10 mins. The necessary dye is added to this bath and run for 1 to 2 hrs. For some shades, ammonium sulfate is used in the penetrating bath to insure good color exhaustion.

How Drying Is Done

This mill uses looper dryers equipped with beaters and a vacuum slot to remove excess water. Its first dryer was constructed at the plant. The new dryer was made by J. O. Ross Engineering Corp.

Goods come from the becks folded in stainless-steel trucks and are threaded up through the beater system and across the vacuum slot; then they are fed to the dryer. The beaters



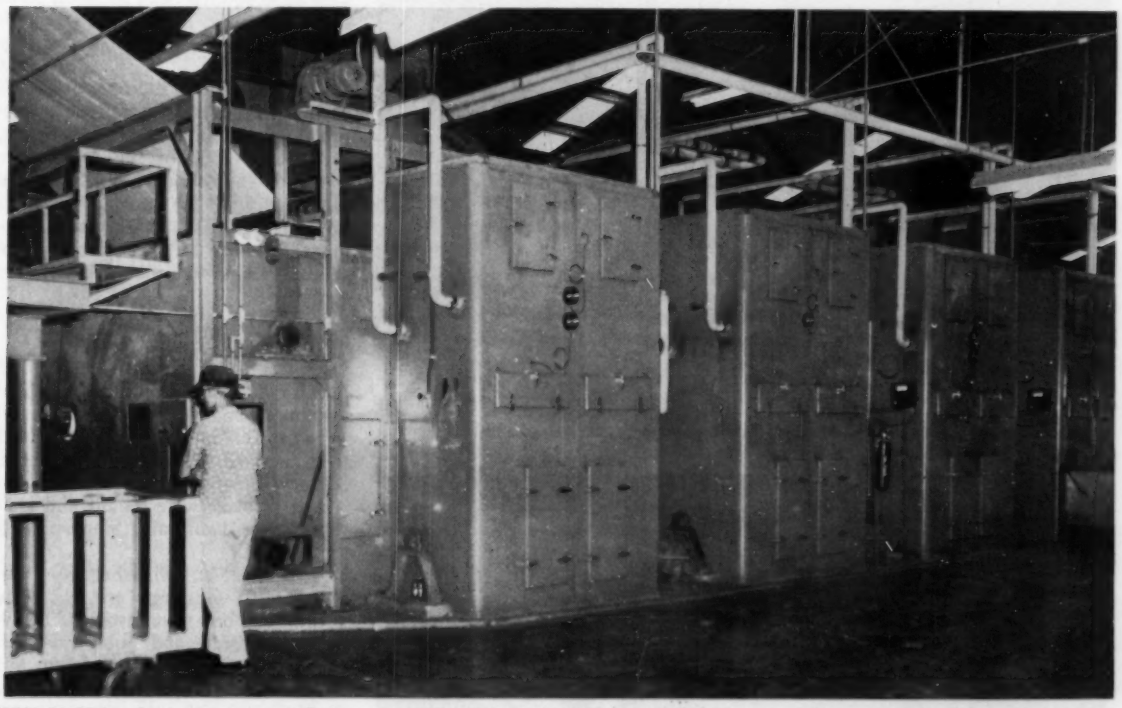
ENTERING DRYER, carpeting passes through scroll rolls and beater system that fluffs pile. Two 40-hp. vacuum pumps reduce water content to 75 to 80%.

are tabs made of belt leather fastened to a shaft. The carpeting may be beaten on the back or face, depending on the way they are threaded through the beater system.

Apparent drying rates are slow and production is figured in feet per day because of the great bulk of the carpeting, which contains 75 to 80% moisture after extraction. The new dryer will handle 10,000 running feet of carpeting in 24 hrs.

The advantages of having adequate drying capacity are manifold. First, of course, is the removal of a basic bottleneck in production. But prompt drying also minimizes the side effects produced when hundreds of pounds of fiber lie crushed at the bottom of a truck acting as a filter for water impurities and traces of finishing or dyeing chemicals. Crush marks, stains, and cloudy dyeings were apt to result when the carpeting had to wait too long at the dryer.

And not the least of the benefits of a well-balanced plant is the effect on personnel. R. S. Mahoney, plant superintendent, says, "We worked 24 hours a day seven days a week on this job last year, and still we couldn't keep up properly. It's hard to get people to work for any length of time on such a schedule. Now we keep ahead of dyeing without any need of excessive overtime and get better results."



ROSS DRYER has five temperature-controlled areas (one bay not shown) that gives flexibility and control of drying to eliminate overdrying. Temperatures are set at 260° F. for the entering end and 230° F. for the delivery end.

Fieldcrest's $14.5-Million Modernization Program

Fieldcrest Mills, Inc., with headquarters at Spray, N. C., is completing a 10-year modernization program designed to increase production and reduce costs throughout its eight existing units. Little is being spent for plant expansion.

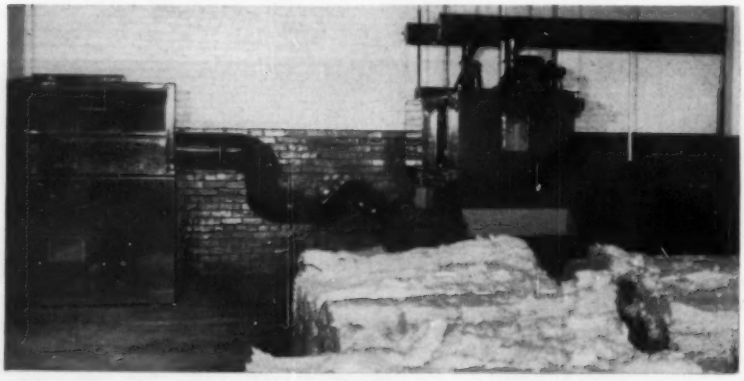
Here's how $5.5-million, authorized since 1954, is being spent by the new management—

- **Yarn manufacturing—45%**
- **Weaving—30%**
- **Finishing—15%**
- **Auxiliary equipment—10%**

By WILLIAM G. ASHMORE, Associate Editor, TEXTILE WORLD

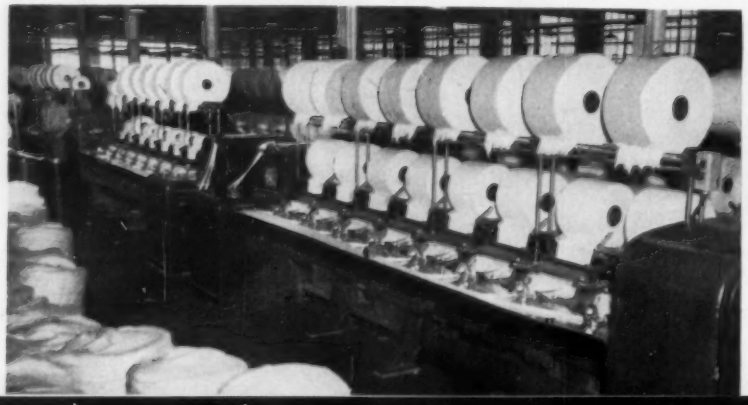
DURING THE LAST 10 YEARS, Fieldcrest Mills, Inc., Spray, N. C., has invested over $14.5-million in modernization, including $2-million authorized for 1956.

Of this sum, $5.5-million has been spent or authorized since 1954 by the new company that bought the mills late in 1953 from Marshall Field & Co.



OPENING ROOM in the Towel Mill was rebuilt around Axi-Feed and Axi-Flo equipment.

COMBERS were installed in the Sheeting Mill to permit production of combed percale sheeting.



The improvement program is aimed at upgrading quality and increasing production per unit. The fact that only $250,000 has been spent on plant expansion since 1954, while over $5-million went for machinery, is significant.

A breakdown of the current ($5.5-million) program by R. A. Harris, vice-president in charge of manufacturing, shows that 45% of the funds were spent for improvement of yarn manufacturing, 30% for weaving, 15% for finishing, and 10% for auxiliary equipment. The last category includes substantial sums for materials-handling equipment.

Sheeting Mill

Almost every department in the Sheeting Mill has been improved. The opening room was reorganized, and Whitin Axi-Flo cleaners were added to each of the two lines of equipment. Six new F-7 feeder hoppers were installed. Pickers were rebuilt and converted into two-beater single-process units.

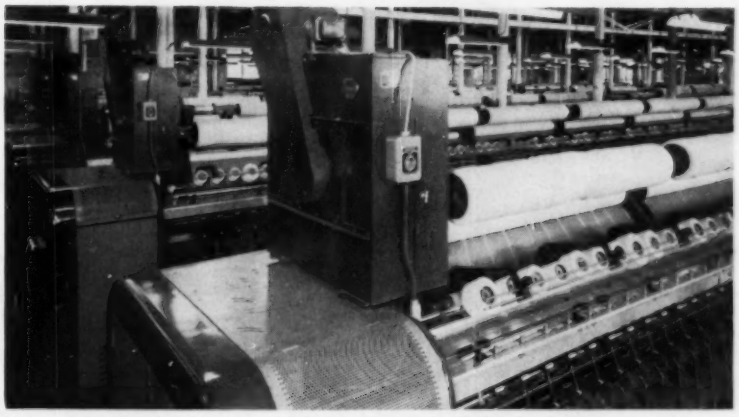
Two Saco-Lowell sliver-lap machines, 20 ends up, and 12 new Whitin combers were installed. Drawing was rebuilt and equipped with Medley change-overs, revolving top clearers, and spring-type bottom clearers.

New Whitin one-process long-draft

roving frames were installed to produce 0.85-hk. roving for spinning into 21s warp and 22s filling. The yarn is woven into carded muslin sheets of a much higher quality than the mill formerly made. Combed percale sheets also are made.

The entire spinning department was modernized, and 38 new Whitin frames were added. All old frames were equipped with the Roberts creel and drafting system and Whitin ball-bearing spindles.

Other new equipment in the Sheeting Mill includes two Barber-Colman spoolers, Abbott quillers for rewinding filling, a West Point hot-air slasher, and 70 new looms. Old looms were widened, and larger beam heads were installed.



NEW SPINNING FRAMES were installed in the Blanket Mill to make the operation more flexible.

Blanket Mill

The Blanket Mill, already equipped to manufacture almost every type of blanket, was made more versatile by adding three new wool spinning frames, a multiple-can slasher, and 54 new looms.

Vibration of the weave-room floor was eliminated by tearing out the wooden top floors and subfloors and pouring 5 ins. of reinforced concrete on the timbers.

Towel Mill

The Towel Mill opening room was completely reorganized around Axi-Feed and Axi-Flo equipment, set up in two lines to produce a total of about 2,000 lbs. of stock per hour. Each line has six Saco-Lowell No. 7 blending feeders with Axi-Feed attachments, a mixing table, an Eriez magnetic trap, and Axi-Flo cleaners.

Three pickers were rebuilt into single-process units with one three-blade and one Kirschner beater each. Drawing was reworked, and spinning is being modernized.

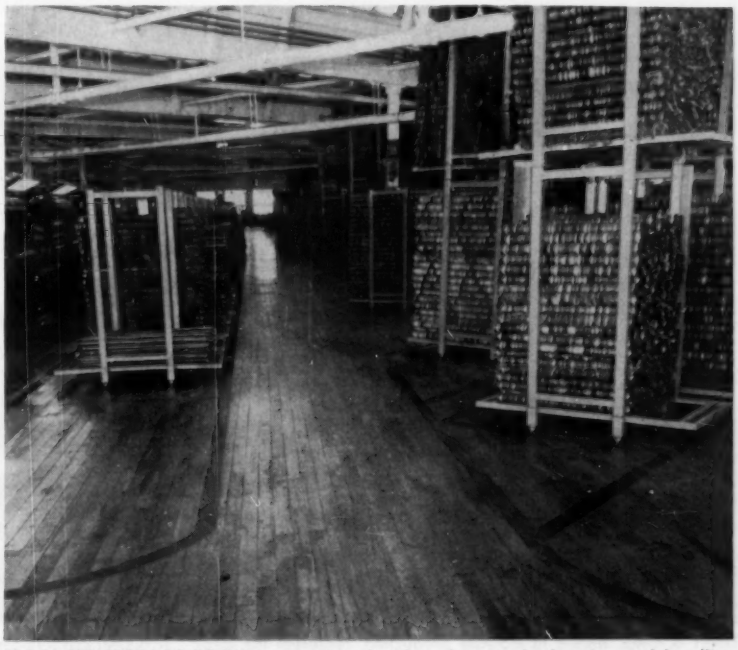
Three nine-can West Point slashers and 52 new C&K terry looms were installed in the weaving department.

The dyeing and bleaching operation was revamped. Additional washers, dryers, a continuous bleaching range, and a continuous vat-dyeing range were installed. A new piece-dyeing department was set up.

Another warehouse was constructed at Fieldale to give the Towel Mill additional storage space. The building has 55,000 sq. ft. for storage and 6,500 sq. ft. for packing and shipping.

Packaging Is Stressed

In addition to process improvement, the Towel Mill has improved its product development and packaging. Several years ago, the mill pioneered in "serve-yourself" merchandising by installing displays in retail stores to encourage customers to buy several items in a transparent package instead of a single product.



SPOOL-SET STORAGE ROOM was equipped with racks to make locating and handling the sets easier.

The Towel Mill produces a complete line of towels and toweling. Three classes of terry ensembles are made—jacquard, dobby, and cam fabrics. End products are dish, beach, bath, and name-woven towels and yard goods.

Synthetic Fabrics Mill

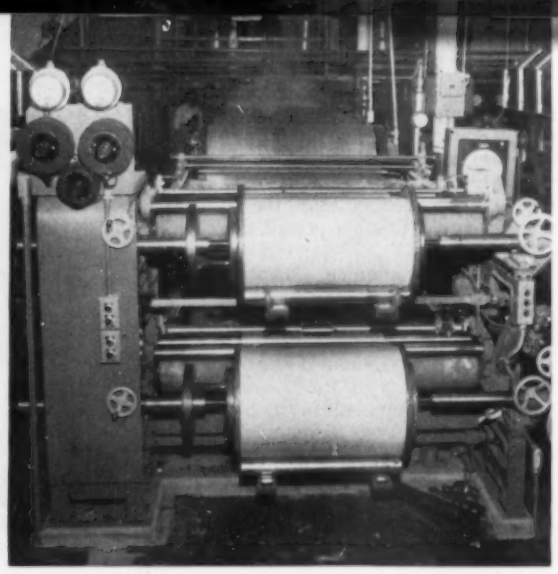
The Synthetic Fabrics Mill, which is switching back to the manufacture of silk and silk-combination dress goods, has added 16 Abbott automatic radial quillers to reduce quilling costs. Other new machinery, primarily for silk processing, includes eight winders, a warper, an extractor, and a doubler.

Karastan Rug Mill

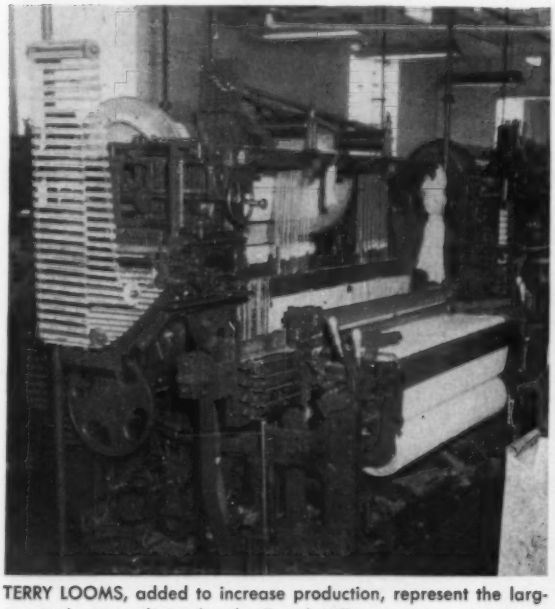
Many improvements were made at the Karastan Rug Mill. Three new needle looms, developed and patented by Fieldcrest and manufactured by Crompton & Knowles, were installed. These looms, which are highly productive, bring the total to seven added in recent years.

Other new equipment at Karastan

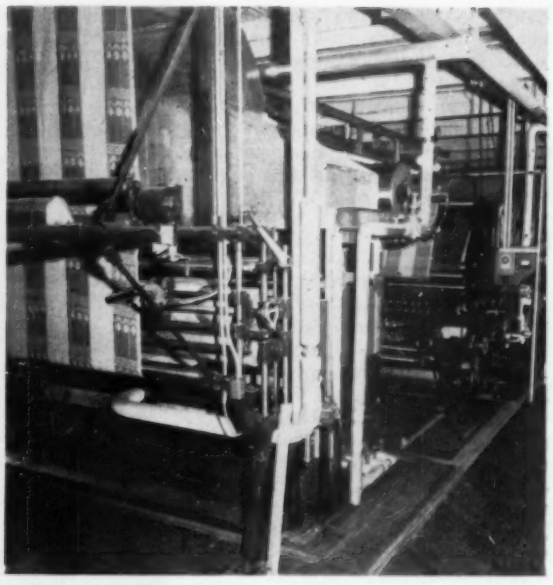
SILK WARPER was installed when the Synthetics Mill resumed manufacture of silk and combination-silk fabrics.



THREE NINE-CAN SLASHERS were installed in the Towel Mill to balance production for new looms.



TERRY LOOMS, added to increase production, represent the largest single expenditure for the Towel Mill.



A COMPRESSIVE-SHRINKAGE MACHINE was installed in the Finishing Plant to produce Sanforized sheets and bedspreads.

includes a Sargent continuous skein-scouring machine and new winding and beaming equipment. The scouring equipment provides extra capacity needed for the additional looms and gives better-quality work. The winding and beaming equipment has lowered costs and increased loom efficiency by producing better beams.

Layout Was Rearranged

Karastan reworked and rearranged its old equipment to make better use of available space and to permit installation of materials-handling equipment.

Overhead shafting was eliminated in the setting department, and the frames were equipped with individual motor drives. Changes in the storage department include motorized materials-handling equipment, steel racks, and a pallet storage system.

Finishing Plant

A number of improvements were made at the Finishing Plant. Two additional Rodney Hunt inclosed dyebecks and one Hunter pin dryer were installed in the wet-finishing department.

Six new Gessner nappers were installed and six more will be added this year. The nappers are more productive and require less space than the machines formerly used.

Gas Ovens Are Added

Gas-fired Industrial Heat Engineering ovens were added to the bedspread and blanket ranges to permit the application of resin finishes. An additional Morrison jig was put in, and building alterations were made to accommodate it.

A photoelectric weft-straightening system, developed by Fieldcrest, was installed in the bleachery to straighten the edges of cloth automatically as it is processed on the finishing machines.

LUBRICANTS IN THE MILL must be used fast or stored away from lint.

Modern LUBRICANTS Need Great Care

• Modern lubricants with the new additives can't be handled and stored in a slapdash manner. Here's a system to handle, store, and use lubricants that will help keep your machines running.

By ERNEST W. FAIR

LUBRICATION REQUIREMENTS of modern textile machines with their high speeds, high loads, and precision adjustments are very severe. In addition, the premium-grade lubricants require great care in handling, storage, and usage.

The improved qualities of lubricants come from small quantities of selective additives that are present in very delicate balance. If this balance is disturbed even to the smallest extent, the properties of the lubricant are impaired.

These new developments make it essential for every type of modern lubricant to be handled with great care. Proper care begins with unloading, particularly large drums.

Direct transfer to a loading platform is best. If you don't have a loading platform, you must use a ramp. And slide the drums endwise to the lower level. Never drop drums, even on a cushion, because the seals will split and leakage will occur.

Where distances are short, drums can be transferred by rolling them. But for long distances, use hand trucks, lift trucks, or other conveyances to avoid strain on the seams.

Store Drums With Care

Store lubricants in a central location so that there is little handling of containers; if containers are handled little, there's less chance of damage. The storage area should be free from dust, vapors, and other forms of contamination. Indoor storage is always best.

However, in some instances outdoor storage of large drums in particular is necessary. In outdoor storage, place the drums on their sides on racks; never lay them on the ground. The old practice of setting drums upright on the ends causes accumulations of rain water, which is sucked into the drums by the normal breathing actions.

When old-time lubricants were used, water contamination could be handled by allowing the moisture to settle to the bottom of the container. Today's grease, with so many additives, must not get wet. Many of these additives are sensitive to water, and some of them may be removed partially or completely by contacting just a trace of water.

Separate Lubricants

It is best, of course, to store all lubricants in a fireproof area. Brick, tile, or concrete walls are preferred; floors should be of the same material and fitted with suitable drains. Woodwork, in addition to being a fire hazard, is hard to keep clean.

Cleanliness is often neglected in storing lubricants. The average workman thinks that the containers that house lubricants are sturdy, safe, and secure and that nothing can enter them. This thinking is not entirely correct. In addition to the disturbance of chemical balance, other contamination is possible even in the finest modern containers. When storage areas are painted in light colors, added protection is provided.

Store different brands and types of

CONTINUED ON PAGE 111

HOSIERY MACHINES are laid out in units of 36 machines with 6-ft.-wide aisles. Glass blocks, good lighting, and white ceilings provide excellent light.

KNITTER'S BENCH at the end of each line of machines covers the motor and lineshaft drive. All stockings are inspected on the rotating form on the bench.

Leininger Expands To Make More SEAMLESS HOSIERY

This Pennsylvania mill has been making hosiery since 1898 and has gradually increased its capacity. To meet the present demands for women's seamless hosiery, a modern new knitting room has been built above the existing plant. Latest equipment that has been installed includes—

- **New knitting machines**
- **Air conditioning**
- **Glass-block windows**

By JAMES H. BLORE, Associate Editor, TEXTILE WORLD

William G. Leininger Knitting Co., Inc., has been making women's seamless hosiery in Mohnton, Pa., for 43 years. During this time, the mill has seen many changes. When additional space was required recently to house more machines, a new knitting room was built over the existing finishing room.

The new knitting room was made specially for the manufacture of fine-gauge nylon hosiery. No expense has been spared to put in modern equipment. Air conditioning and other aids are already paying off in more and better hosiery.

The knitting machines are Model Ks and KNs with 400 needles and 474 needles. There are 130 machines in operation, but the goal is 216 machines.

The machines run at 185 rpm. and knit one stocking in about 18 mins. They are laid out in rows of 12 machines, with each knitter attending three rows.

Lots of Room To Work

There is a 6-ft. aisle between the machines, and the main aisle down the center of the room is 12 ft. wide. The fixers' benches are arranged in this aisle.

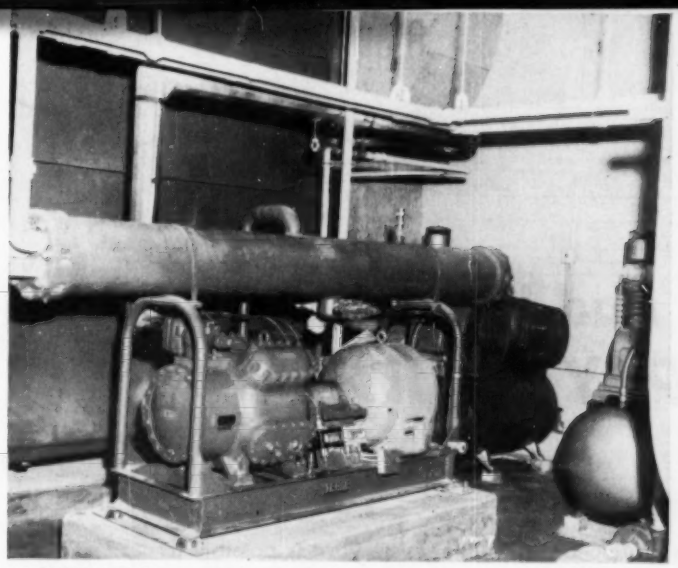
Knitters' tables are positioned in the main aisle at the end of each line of machines. These tables are metal, but they are Leatherette covered to prevent picks and pulls. A shelf under the table holds knitters' personal belongings and also needles and sinkers for the machines on that line.

The work table also serves as a cover for the lineshaft drive, although the belt to the shaft from the 5-hp Diehl motor is guarded with a metal cover. A bag on the table holds waste, and this waste is recorded each week for each knitter.

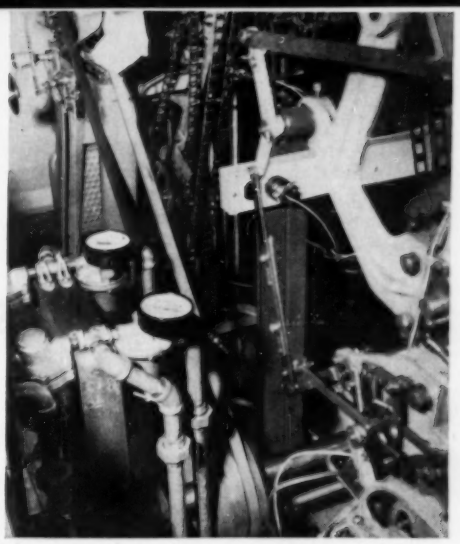
Rotating inspecting forms are fixed to each alternate table. All stockings are pulled on a form and inspected on both sides for such faults as needle streaks and pull threads. They are turned inside out and sorted into three grades.

Most machines are equipped with automatic take-down attachment. Air for this operation is supplied by two compressors that build up to 100 psi.-ga. The compressors are located in the penthouse with the air-conditioning equipment.

The air lines run under the floor to



AIR-CONDITIONING unit is located in the penthouse above the knitting room to keep the room at 80° F. and 50% r.h. Two compressors are also in this room.



COMPRESSED AIR for the automatic take-down attachment is split to give two pressures. Electrical conduit supplies current for the stop motions.

the alley end of the lineshaft. The air line is divided to give two pressures. The low-pressure line is cut to 40 psi.-ga. to control the stitches at the dial.

The two lines run under the lineshaft to the knitting machines. Each line has a moisture trap positioned on the pipe before the valve to keep water from blowing on the machines.

An electric conduit is built over the lineshaft to supply current for the electric stop motion. An outlet on the conduit is provided behind each machine.

The knitting machines sit on galvanized drip trays to keep oil from seeping on the floor. These trays are cleaned once weekly.

A double row of fluorescent daylight lamps, 8 ft. from the floor, is suspended over each line of machines to supplement light from the windows and to provide more-than-ample light at night. The ceiling, ceiling girders, and air-conditioning ducts are all painted white.

Glass Blocks Fill Wall

To conform to the general appearance of the mill, 8-in. glass blocks are laid from the 4-ft.-high sill to the ceiling on the three outside walls. This arrangement gives excellent lighting and yet conserves refrigerated air. The inside wall adjoining the main building is of beige-colored tile.

The floor is made from 1¼-in. maple laid out over 4-in. planks. The maple is laid diagonally from corner to corner of the room to take the weight of any knitting machine the mill may use in the future. The roof is concrete and Permalite with a 1-in. Fiberglas insulation to help maintain conditions more constant.

The air-conditioning equipment and the compressors are in a penthouse built over the knitting room. A Trane compressor driven by a 40-hp. motor supplies the 45-ton air-conditioning unit to continually circulate air through the knitting room and keep the room at 80° F. and 50% r.h.

The two 10-hp. American Brake Shoe compressors that supply the

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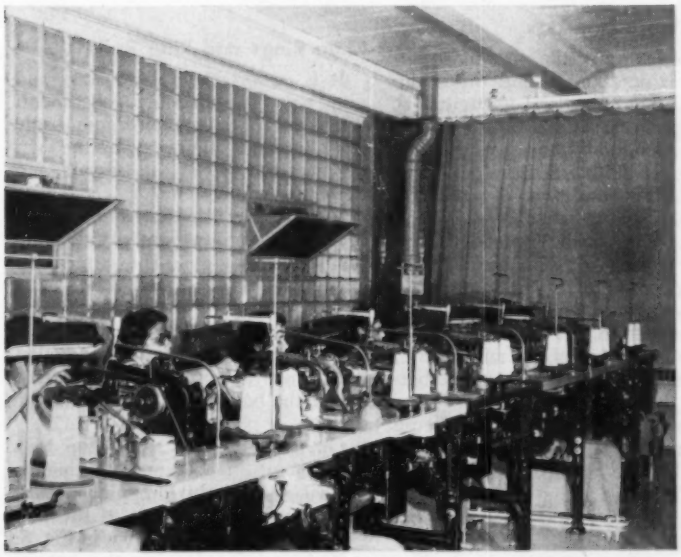


LOOPING is done on 44-point and 38-point looping machines. To keep glare from hurting loopers' eyes, a brown cloth curtain is drawn over the glass-block windows.

INSPECTING of gray hosiery is done on an automatic machine. Clipping of the loose threads is done at the same time, and the stockings are turned.

Tips on Reducing Bad Work In TWISTING PLY YARNS

• In twisting ply yarns, high production with little waste yarn is possible if a lot of attention is given to mechanical details. Watchful operators are also a big help.

By **FRANK VOGEL,** Consultant on Statistical Quality Control

BEST RESULTS are obtained in twisting ply yarns when spindles are concentric with rings. The rings and ring rails should also be level horizontally.

Having spindles concentric at the bottom of the ring-rail traverse is particularly important. There must be room at this position for the traveler to pass easily between the hard bottom of the bobbin and the ring. The space between the ring and the bobbin at this point is the smallest in the complete traverse.

An off-center spindle with the traveler trapped between the bottom of the bobbin and the ring is shown in Fig. 1.

Trouble always occurs when a spindle is off center. The end of the yarn breaks when the traveler is trapped. And when there are no ballooning plates, five or six ends may tangle, break, and lap around the main roll. As a result, waste yarn is made. Moreover, undesirable knots are made in the yarn when the broken ends are tied together again.

To avoid trouble from off-center spindles, the foreman or fixer should have a regular schedule to check spindles and recenter the ones that are not concentric. Some spindles on a given frame creep after they have run for a time even if they are set carefully originally.

It is a good practice to keep a record of the frames that have spindles requiring recentering. A simple but adequate report is shown in Fig. 2. It shows at a glance which frames have the most spindles recentered.

In addition to breaking ends and causing waste and knots, off-center spindles throw doffing schedules out of kilter; and a frame may need doffing before a doffer can get to it. Consequently, unless the frame is stopped, the off-center bobbins rub against the rings and pick up lubricant and dirt. These soiled spots are often difficult to remove from the yarn in the finishing process.

Check Worn Bushings

On old twisters, the lifter-rod bushings wear occasionally and throw the ring rail out of vertical alignment at the upper part of its traverse. This fault is common on ring rails with bushings at the back of the rail.

With this condition, the rail tips down at its outer edge, as shown in Fig. 3. This fault causes changed traveler tensions, possible broken ends, rubbing of bobbins on rings, and soiled yarn.

These defects are particularly noticeable at the top of the rail traverse, but trouble may occur also at the bottom of the traverse.

Worn lifter-rod bushings also cause the ring rails to chatter, especially when they are at the top of the traverse. The chattering is caused by wear, which gives too much play between the rod and the brackets.

The pull of the traveler creates the chattering. Sometimes the ring rail moves so much that a considerable noise is made. The undesirable movement of the ring rail traps the travelers. The travelers may be trapped at both the bottom and top of the traverse and at all points between. Again, warp ends are broken.

The only remedy, of course, is to remove the worn bushings and replace them with new ones. Usually twisters operate several years before bushings wear enough to replace them. But when mills operate three shifts, the bushings should be checked for wear regularly.

Align Rings and Ring Rails

It is important to have rings and ring rails in horizontal alignment. Rings out of alignment cause badly filled bobbins. High rings let the yarn run over the top of the bobbins and cause tangled yarn and waste.

They also let the yarn start high on the bobbin and cause the cut-in condition shown in Fig. 4. The yarn fills in loosely instead of packing in solidly as it does normally. Broken ends result. This condition also adds difficulty in the subsequent winding operation both when the yarn is pulled over the top of the bobbin or wound from the side.

On older twisters, rings drop to a lower point in the ring rail than is normal. Where this dropping occurs, the twisted yarn piles up at the bottom of the bobbin, as shown in Fig. 5.

Yarn running low on the bobbin causes trouble in winding also, but possibly not as much as on high-

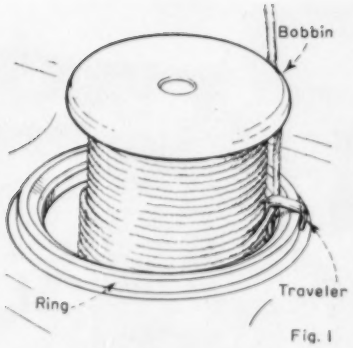


Fig. 1

Twisting Department	
Spindles Centered	
Frame No.	
1	//
8	///
6	~~////~~
7	~~////~~ /
5	~~////~~ //
4	~~////~~
3	////
2	///
9	//
10	/

Fig. 2

wound bobbins. However, the yarn sometimes runs over the bottom of the bobbin, and ends are tangled. Often these bobbins can't be repaired, and all the yarn goes into waste. And of course production is lost.

Sections of ring rails may become higher or lower at given points when one or more lifter rods get out of adjustment. This condition also results in tangled yarn on the bobbins by (1) causing the yarn to run over the top of the bobbin and cut into the bottom of the bobbin, as shown in Fig. 4, or (2) piling the yarn up at the bottom, as shown in Fig. 5. Both situations obviously increase waste yarn and cause loss of production.

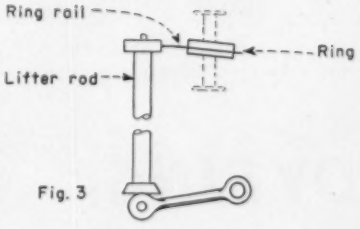


Fig. 3

Let Operators Help

The practice of having a worker spend his full time repairing improperly filled bobbins is a bad one; it encourages machine operators and supervisors to neglect the conditions that cause the bad bobbins.

Operators should report faulty conditions to the supervisor at once so that spindles or ring rails can be aligned immediately.

Each operator should repair his own badly wound bobbins. Then he will watch his twister frames more closely and will report quickly any condition that might cause bad bobbins.

Having a special employee to make periodic broken-end checks is a good practice. A printed form can be used to record each broken end on one or more frames during the check, and all machines can be checked during the testing period.

The checker can use a crayon to mark all spindles and ring rails that seem to be out of alignment. Then the supervisor can have the necessary adjustments made immediately.

Between checks by the checker, twister operators should mark their own spindles or ring rails making badly built bobbins.

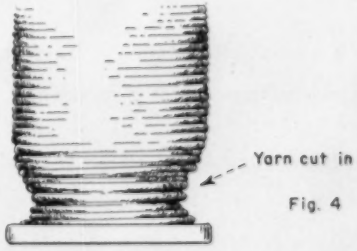


Fig. 4

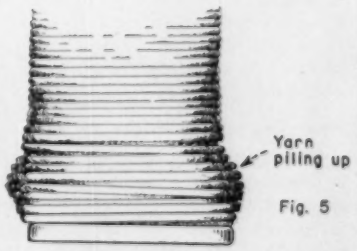


Fig. 5

CONTINUED FROM PAGE 107

lubricants separately and in their proper places. Because lubrication requirements have become so specialized on textile machines, an error in using any given lubricant may cause serious damage to the machine.

Do not order lubricants in large quantities; discounts for large orders are small, and the discount seldom justifies the possible hazard in taking care of large amounts of stored lubricants. There is also danger of damage through changes in the delicate chemical balance of the lubricant over a long period of time.

Never apply direct heat to a lubricant container when you have to transfer it from a cold storage area to the plant for immediate use. Direct heat melts the sealing compounds on drums and results in leakage and possible harm to the product. Make the transfer far enough ahead of time to allow room temperature within the plant to heat the lubricant slowly and safely.

Don't Overexpose Lubricants

Exposure to extreme temperature, both hot and cold, can damage modern lubricants. It is better to discard a lubricant that has been subjected to extreme temperatures than to risk using it on plant equipment. Much damage to lubricant efficiency is brought about by using lubricants that have been impaired by extreme temperature.

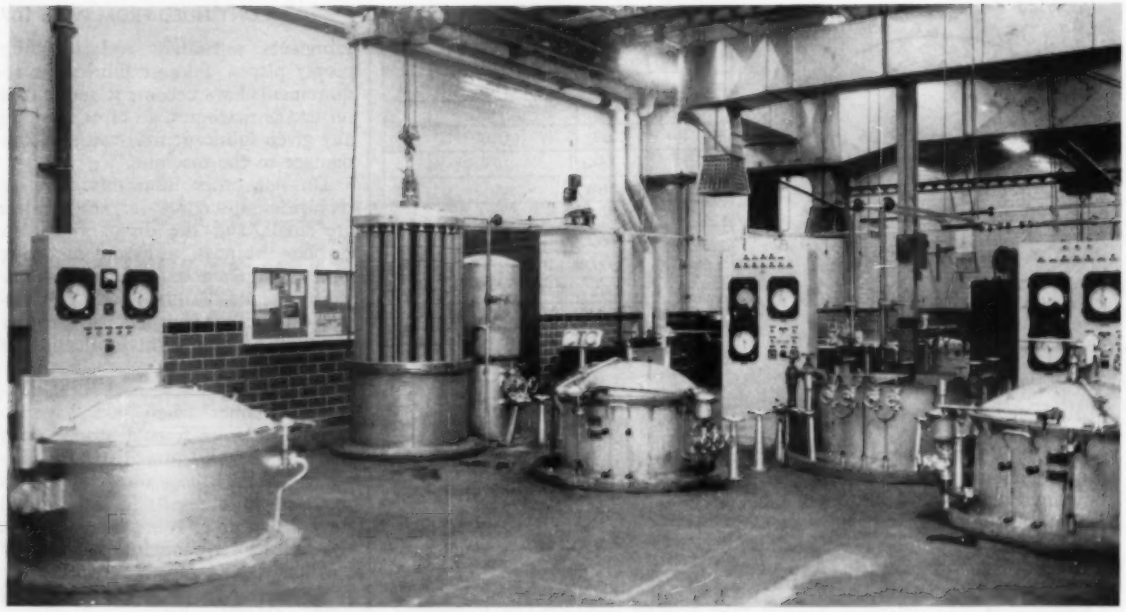
All equipment used to transfer a lubricant from its container to the point of lubrication should be kept clean; it's best to clean the equipment each time before it's used. Only a little dust contaminates a lubricant, and unnecessary wear on bearings and other machine parts results.

Keep accurate records on lubricants, and date each container where an appreciable amount of stock is kept in storage. Then use the oldest lubricants first.

Check lubrication employees often to guard against misuse of the lubricant. When it's possible, centralize the lubrication job. Train one or more employees as supervisors; give them instructions in handling and applying lubricants to every location on every machine.

To many workers, oil is oil. This idea has no place in modern textile mills. The indiscriminate mixing of types and brands of lubricants can cause as much damage to textile equipment as the use of improper lubricants.

Supervisors must impress on every machine operator that there is a specific lubricant for his machines and that no other will do.



MAJOR UNITS in the Thies dyeing system now in production at American Thread's Sevier, N. C. plant. At left is the extractor-dryer kier. Next is an aftertreating tank, a dye kier, chemical tank, and another dye kier. Two other aftertreating tanks complete the battery.

PACKAGE DYEING
At American Thread

Since installing a Thies package-dyeing system, American Thread Co. at Sevier, N. C., has been able to increase production and cut costs for two major reasons—

- **The processing is divided into steps, with a suitable vessel for each step**
- **Drying time is reduced to a matter of minutes instead of hours**

By ROBERT W. PINAULT, Assistant Editor, TEXTILE WORLD

American Thread's new package-dyeing setup borrows from the auto assembly-line principle to produce package-dyed yarn in greater quantity and at less cost than has been possible before.

Package dyeing used to be a good deal like a New England clambake—you assembled the ingredients in one spot, covered them up, and went away for a couple of hours and let nature take its course. But in this new look at package dyeing, the yarn carrier is in and out of as many as four different vessels during the complete dyeing process.

The efficiency of the system is attained by using the two dye kiers for strictly dyeing operations, with the exception of the light prescouring to be deserибed.

All other operations, such as diazotizing and developing, oxidizing, and soaping are done in one of the open aftertreating kiers—relatively inexpensive units. Extraction and drying is done in a closed cast-iron kier as a separate operation.

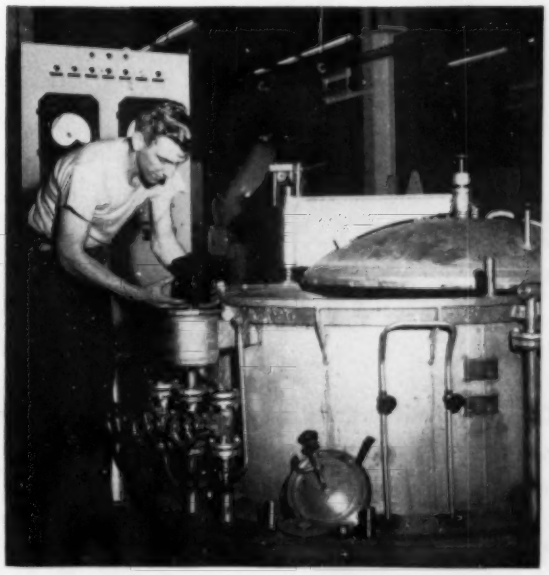
To get the heavy loads from kier to kier, an overhead crane has been installed.

How The Setup Works

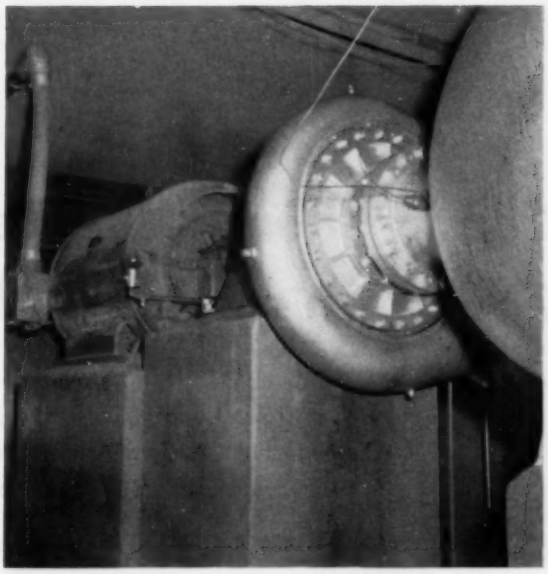
When a separate scouring operation is required, it is done in one of the aftertreating tanks. These open kiers are provided with a central duct upon which the yarn carriage rests. A heavy clamp is placed over the top of the carriage to make a tight connection. The scouring liquor is pumped into the central duct and through the packages, and it returns to the supply tank by means of overflow ducts placed above the package level.

On the finer-grade combed mercerized yarns going into medium and dark shades, the scouring is usually done in the pressure-dyeing kier. Scours of this type are short—really little more than a good wetting-out operation—and transfer time from one kier to another is saved.

To get set for a scouring-dyeing operation, a load of 429 packages is assembled on the 39 tri-finned spindles used in the Thies system. Packages



SAMPLE KIER carries one package of yarn and produces results consistently similar to the large kier. A feature of this pressure-dyeing kier is the simple closure. Rotating the cover brings built-in cover lugs under kier lugs; seal is by air-inflated gasket.



CENTRIFUGAL BLOWER, powered by a 200-hp. motor, pumps hot air through packages and recirculates the air after it has been put through a condenser and has been reheated. Controls prevent overdrying and leave 7% moisture in yarn.

average 1 lb. 2 oz. for fine mercerized yarns and may go as high as 2 lbs. for soft knitting yarns. The yarn is wound on stainless-steel springs with a stockinet cover.

When the load is assembled, a hollow head is placed on the assembly and pressure is applied to compress the load on each spindle. The unit is then lowered into the kier and the cover is locked on.

High Pressure Is Used

For light shades in direct and vat color, scouring is carried out at 225°F. for 20 mins. The advantage of being able to use pressure in this kier cuts scouring time and opens up the yarn.

Depending on the dye and the shade, scouring agents will vary from a synthetic detergent alone to soap and soda ash. Dark vat shades get the heavier scour. For naphthol dyeing, Calgon is added to the scour to remove all traces of fatty residues from the soap.

After scouring, pressure is released and the load is cooled to a desirable starting temperature, usually 110 to 120° F.

Then the necessary dyestuff is added. If directs are being used, the required amount of brine is added at the same time. Auxiliary tanks for adding all scouring and dyeing materials are adjacent to the dye kiers.

For direct, developed, and aftertreated directs, the temperature is raised to 225 to 250° F. and dyeing proceeds under these conditions. A sample package contained in a small kier at the side of the main kier can be checked to see how the dyeing is coming along. Circulation is periodically reversed from inside out to outside in.

When the shade is matched, the bath is dropped and the load hoisted out. The dyeing kier is then freed for another dyeing operation.

For vat dyeing, American Thread uses the pigment-impregnation method, followed by reduction in the same kier. A typical routine is:

Apply dispersed pigment by inside out circulation for 30 mins. at 225° F.

Add caustic and hydro and reduce for 30 mins. at the temperature recommended for the particular dye combination.

The load is then hoisted out and put in an aftertreating kier for oxidizing, soaping, and rinsing. The dye kier is in use for only slightly over an hour.

Drying Speeded Up

The extraction and drying of the yarn is done in a cast-iron vessel separate from the other processing kiers. The Thies system employs a 200-hp. motor to drive a centrifugal fan as the main drying unit. A vacuum pump provides vacuum for the extraction cycle.

When the load of yarn is placed in the dryer, the first operation is a vacuum extraction that takes 10 mins. The machine then goes automatically into its drying cycle. To get even drying all through the package and end up with approximately 7% natural regain, ingenious controls have been provided.

In a typical drying cycle, American Thread sets the master control to deliver air at 300° F. Then two pens on the chart are set at 260° F. and 280° F.

The dryer starts by blowing air from inside out. When the temperature of the air delivered from the packages reaches 260° F., the air flow is automatically reversed and travels from outside in. When the temperature of delivered air reaches 280° F., the cycle is reversed again. Air now travels from inside out and continues until the delivered air reaches a temperature of 260° F.

At this point, the yarn is dry and will contain approximately 7% of regain. The operation takes about 45 mins.

Visual Checks Provided

During the extracting and drying cycles, water that is being removed from the yarn is bypassed from the dryer drain to a visible outlet in the dyehouse so that a direct check on what is going on is available to the operator.

Because the Thies system recirculates the hot air used for drying and condenses the moisture from it in the process, this visual check on removed moisture can be used for the drying as well as the extracting cycle.

The complete setup requires only two men, and production potentiality is in the neighborhood of 75,000 lbs. of yarn in a normal 120-hr. week.

Cooperation Is the Key To Crown's QUALITY CONTROL

• At Crown Cotton Mills, Dalton, Ga., quality is stressed at all phases of manufacture. Adequate records, close follow-up, and cooperation between the weave room and the cloth room keep off-quality cloth to a minimum.

By **WILMER C. WESTBROOK**, Assistant Editor, TEXTILE WORLD

THE 866 LOOMS at Crown Cotton Mills, Dalton, Ga., are producing drills, ducks, sheeting, and osnaburgs. The cloth is finished for a variety of industrial uses. Among the end products of the fabrics are automobile upholstery and head linings, book bindings, shoe linings, chenilles, coated and laminated industrial products, and card clothing.

Since a small defect in the gray cloth will sometimes grow to major proportions in finishing, good quality is a must for industrial fabrics. The cost of finishing, coating, etc., is high; and all cutting and burling is done in the gray before the extra expense of finishing has been added.

To insure the best quality possible, Crown has established a recording and follow-up system to keep tabs on each cut of cloth from weaving through shipping.

Numbered Tags Are Used

In the weave room, the cloth on the looms is inspected closely as it is woven. Cloth is doffed from the modified D, L, and X model looms in rolls of 200 to 500 yds. and is hauled to the cloth room at once.

When it is received in the cloth room, the cloth is run through a batcher that winds 500 to 1,000 yds. to a roll. A tag showing the number of the loom on which the cloth was woven is placed on the roll at this point. The tag is not removed from the cloth but is shipped to the customer. If a complaint is received, the cloth can be traced back to the loom by the number of the tag, which is recorded in a book.

As the roll of cloth passes through inspecting, weighing, packing, and shipping, each operator signs the tag. The weight, yards, yards per pound, and other pertinent information are also written on the tag as the cloth is processed.

The rolls of cloth are transported from the batcher to the inspecting machines by means of a monorail. The sloping top of the inspecting table and the vertical back are made of opaque glass. Fluorescent lamps mounted under the glass give illumination to show up all defects.

Cloth Graded by Points

Cloth is pulled over the inspecting table by a motor, operated with a foot pedal by the inspector. The cloth is burled as it is inspected, and all defects are flagged. Grading is by the point system, but six major defects are the maximum permitted per 100 yds.

Each type and each length or width of defect is classified as either a major or a minor defect. The inspectors have charts showing how to charge every defect.

When a roll of cloth has been inspected, the major defects are added and multiplied by 4; the minor defects are added and multiplied by 2. The total is then added together, and the piece of cloth is classified as first quality or second quality by comparing its point score per 100 yds. with allowable scores set up for each fabric. This allowable score will vary, depending on the end use of the fabric.

A book is kept in the cloth room with a page for each loom in the mill. Each page contains a daily record for a full year. Every yard of second-quality cloth is recorded in the book. A short notice is sent to the weave room for each roll of second-quality cloth as soon as it is graded.

When the notation is made in the book, a check is made to see if the loom has made any previous off-goods. A loom that has two or more cuts of seconds attributable to the same mechanical condition charged to it is reported to the overseer of weaving, and he or his assistant checks the loom immediately.

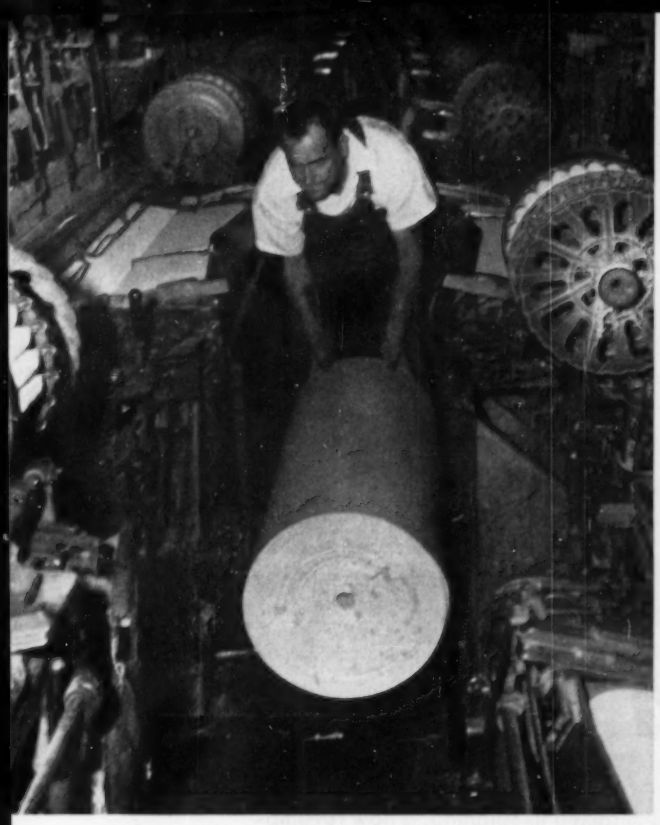
A daily seconds report originates in the cloth room. The report lists the loom number, the weaver, the yards of seconds, style, type of defects, and pieces or cuts.

Breakdown of Seconds Made

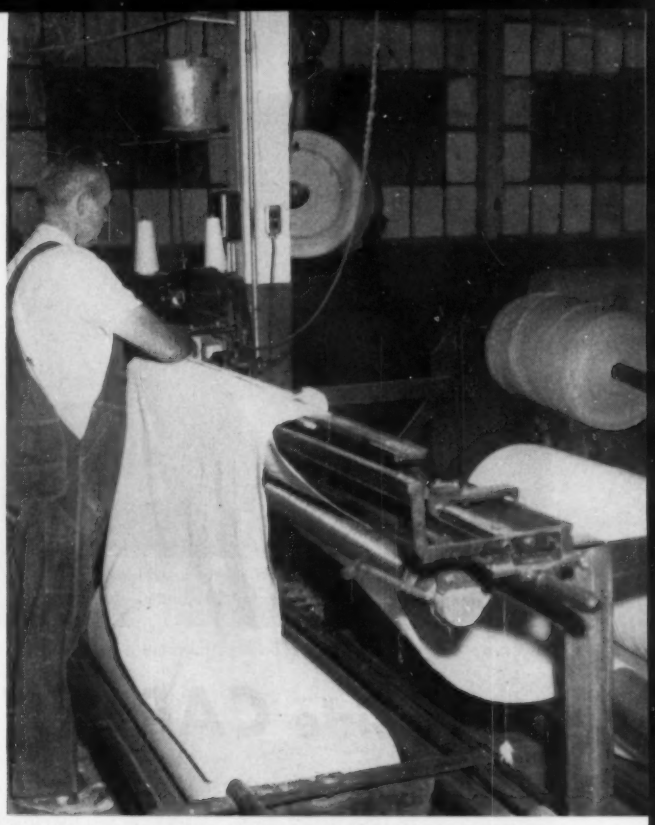
A weekly report is made up of the daily totals. The weekly report also breaks the off-quality goods down to the number of yards of firsts, seconds, shorts, and run-of-loom. The yards of cloth in each category is listed percentagewise for No. 1 weave room and No. 2 weave room and also total for the mill.

With its system of permanently tagging each roll of cloth, keeping records, and instantly following up all second-quality cloth, Crown is able to ship quality cloth and keep seconds below 5% of total production. Also, a moment's check of the records will show what caused each yard of off-quality cloth and who was responsible.

The quality-control system is dependent upon, and receives, the full cooperation of everyone involved from the superintendent of the mill to the trucker who hauls the cloth to the consumer.

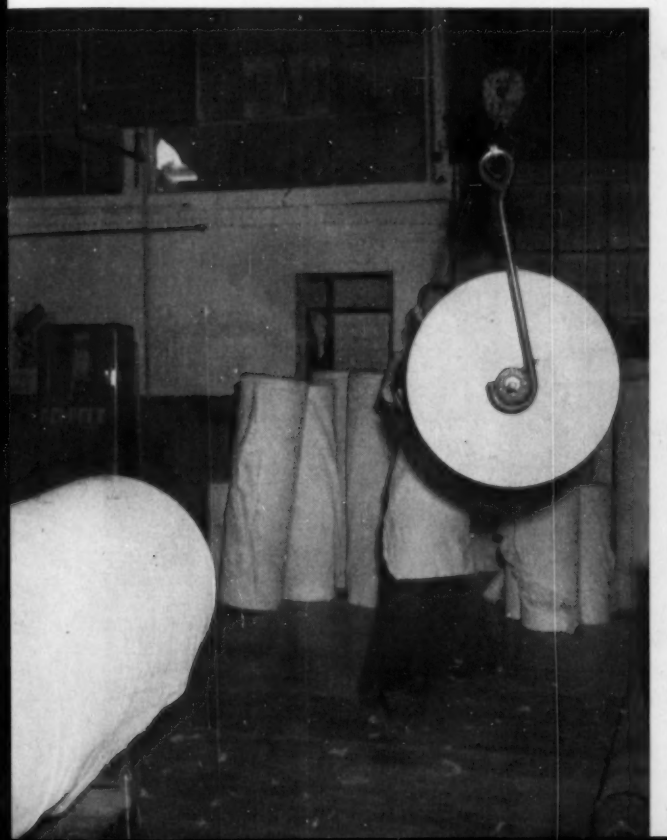


CLOTH is doffed from the looms in 200- to 500-yd. rolls and taken to the cloth room at once.

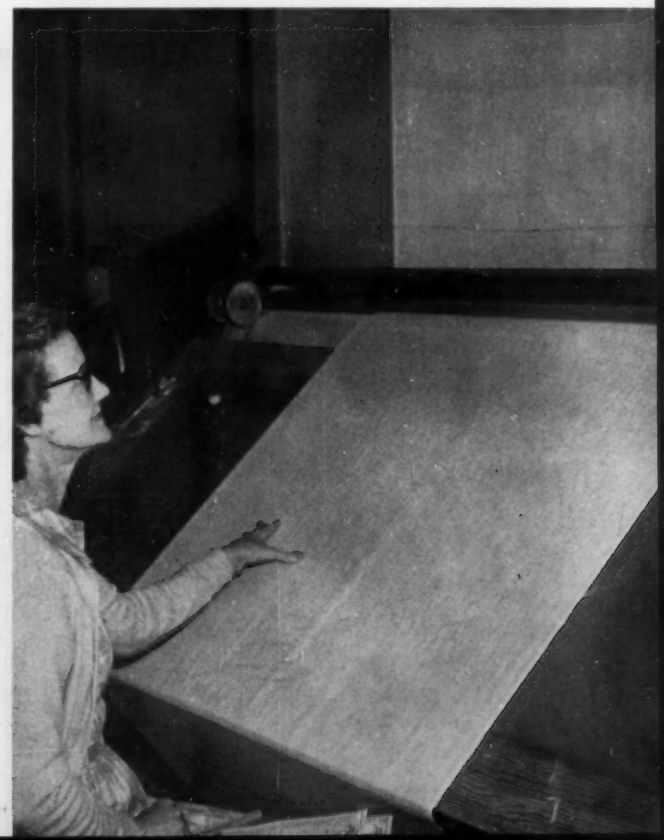


SEAMS are sewed, and the cloth is put up in larger rolls at the batcher to eliminate needless handling.

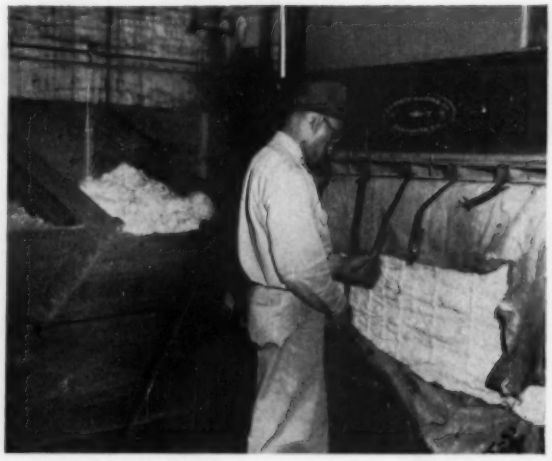
ROLLS are transported by means of a hoist and overhead monorail to and from the inspecting machines.



INSPECTING is done at this machine. Lights under the opaque glass furnish illumination.



OPENING ROOM was modernized recently so that one compact line of equipment cleans stock for 45,000 spindles.



NEW PRESS was installed to bale waste, which is sorted, classified, and baled by one man.

Woodside CARDING Improvements

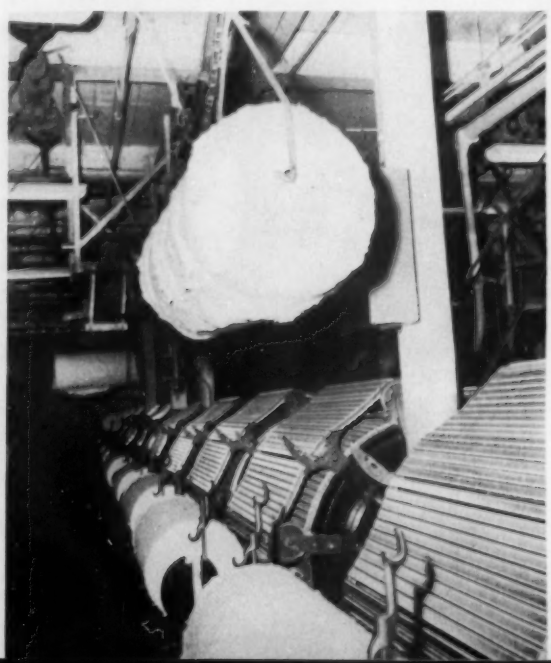
Woodside Mills, Easley, S. C., having modernized its spinning, is now revamping the card room. Here's how old and new equipment is operated while the work is in progress. Highlights—

- Pickers rebuilt—opening and picking waste 3%
- New cards added—sliver variation 9%
- New 12x6½ roving frames installed—55-oz. bobbin made

By **WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

DUST BOXES AND GRID BARS were added to the pickers to improve waste control in this department.

OVERHEAD CONVEYORS were put in to carry laps from the pickers to the cards.



WOODSIDE MILLS is finishing a major improvement project at the mill in Easley, S. C., as part of a multimillion-dollar modernization program in several South Carolina plants.

The first changes at Easley involved modernization of spinning and building improvements [TEXTILE WORLD, Sept., '56, p. 78]. However, the carding department is also undergoing modernization where necessary. Here's how the mill operates while the work progresses:

To card stock for 31s warp and 41s filling from 1 1/16-in. cotton for weaving into print cloth and handkerchief material, Woodside has a compact opening room containing seven modern Saco-Lowell No. 7 hopper feeders and one waste feeder.

These machines are followed by a vertical opener and two No. 11-over-12 cleaners. Twenty-one bales of cotton are laid down, and feeding is from all of them.

A waste-control program has been set up but has not been operating long enough for conclusive results to be reported. Opening and picking waste totals about 3%, but exact figures from other departments will not be available until the new program shakes down. All waste is carefully sorted, weighed, and baled on a new Beaty press adjacent to the opening room.

Pickers Are Rebuilt

In the picker room, there are four three-process Saco-Lowell pickers equipped with blending reserves and dust boxes. Fringe rolls, Universal grid bars, and automatic feed controls were added recently when the pickers were rebuilt.

The pickers have two two-blade beaters and one Kirschner beater. The front beater runs 1,186 rpm., front fan 1,125 rpm.; middle beater 1,201 rpm., middle fan 1,118 rpm.; back beater 1,190 rpm., back fan 1,118 rpm.

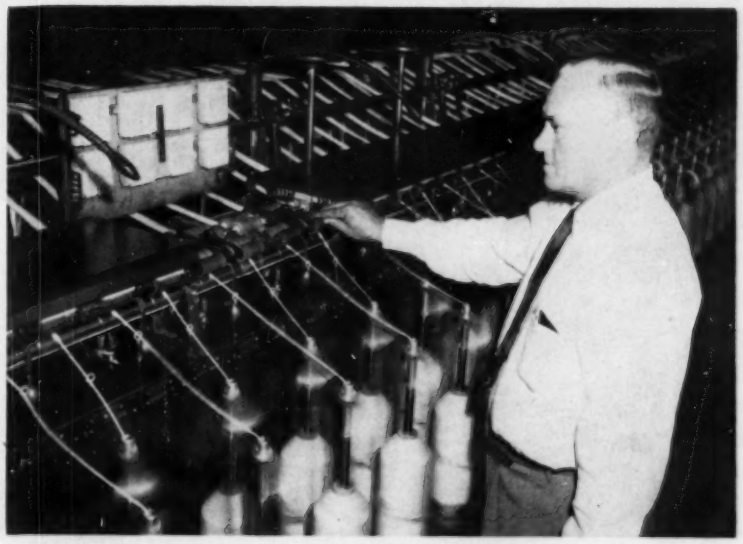
A 63-yd., 15.75-oz. lap is made by each picker every 8 mins. Laps are transported to the cards by an American MonoRail conveyor system.

In the card room, there are 121 Saco-Pettee cards producing a 55-grain sliver at 10 lbs. per hr. Ten of the cards are new. All cards, equipped with Southern States and Saco-Lowell comb boxes, are ground for 3 hrs. every nine days. Card-sliver variation is 9% on the Saco-Lowell tester.

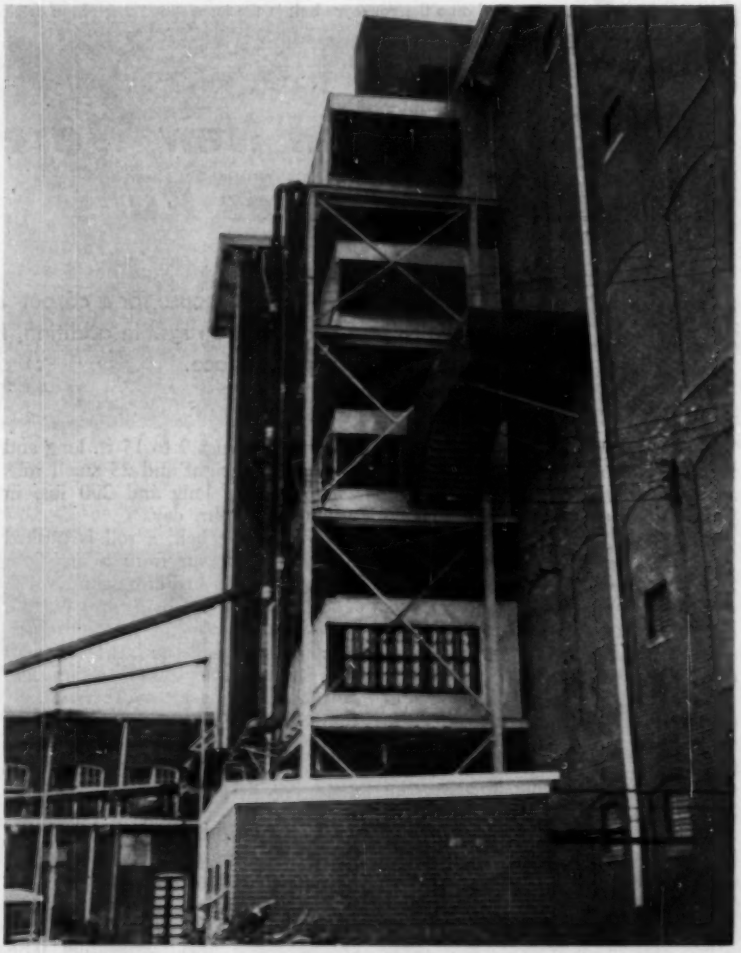
Recently, perforated screens were added to reduce fly, and ceiling cleaners were installed over the cards. Cleaning has been greatly reduced.

The 12x36 card-sliver cans used at

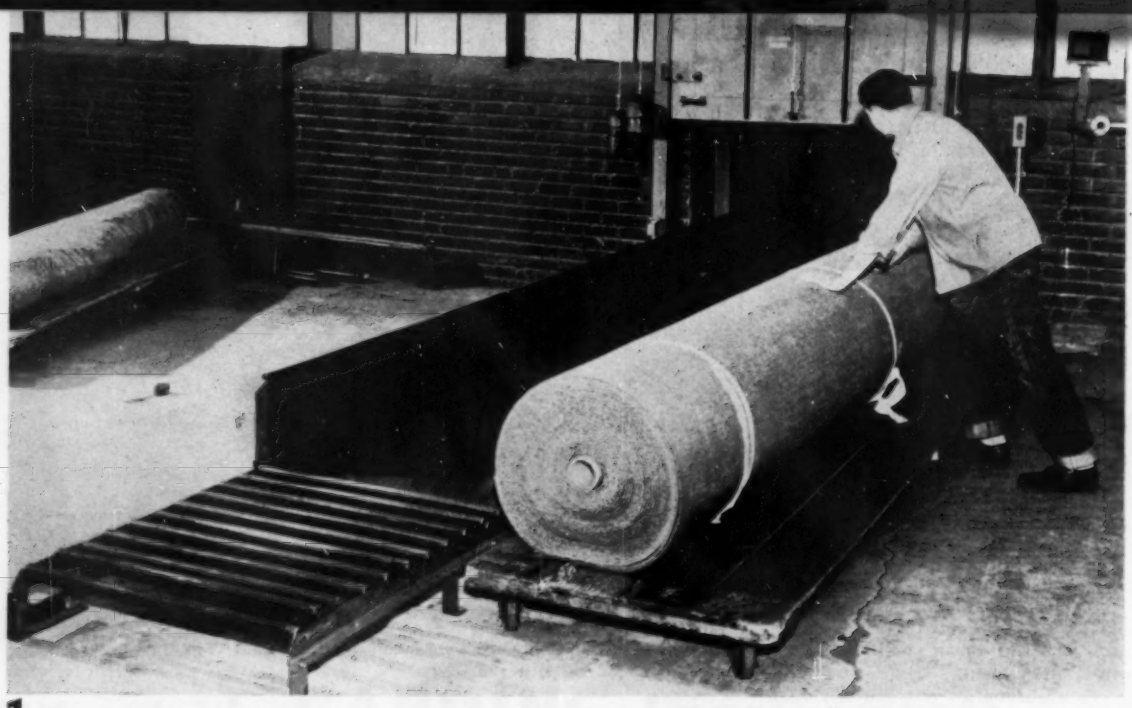
CONTINUED ON PAGE 192



NEW 12x6½ ROVING FRAMES were installed to produce 1.15-hk. roving on a 55-oz. bobbin. Front-roll speed is 128 rpm.



AIR CONDITIONING has been expanded to take care of 6,000 sq. ft. of new floor space. This is the cooling tower.



1 INSPECTED RUGS are rolled onto the conveyor belt in the inspection room of the original plant. Control is by limit switches.

CONVEYOR in New Warehouse Handles and Stores Rugs

• A tunnel conveyor at a new warehouse for a carpet- and rug-weaving mill is used to move rolls of carpets and rugs. In addition, the tunnel stores rugs temporarily to give more plant space.

A NEW WAREHOUSE and shipping department was built recently at Archibald Holmes & Son, Philadelphia, Pa., as an expansion of its rug- and carpet-manufacturing plant.

The new building is a few hundred feet from the original building, and therefore finished rugs and carpets have to be transported from the inspection department on the first floor of the old building to the warehouse.

Conveyor equipment designed and erected by Spivey Co. transports the finished rugs. A 36-in.-wide Thermoid Co. belt conveyor carries the load. Because the load is not abrasive, the belt has no top or bottom cover.

The conveyor is powered by a 2-hp. motor with a magnetic brake to prevent drifting. The belt travels in either direction at 50 ft. per min. It does not run continuously and is operated from either end if necessary, but limit switches also stop all movement.

The belt moves from 25 to 30 large rolls of rugs 9 to 15 ft. long and 800 lbs. in weight and 25 small rolls 27 to 30 ins. long and 200 lbs. in weight each 8-hr. day.

To load the belt, a roll is pushed onto the conveyor from a flat floor truck, as shown in Photograph No. 1. The belt is started by a push button, if limit switches in the warehouse permit; and the roll is run just far enough into the conveyor tunnel to clear the belt loading area for another roll. At times the entire tunnel is filled with rolls.

Rolls are held in the tunnel, Photograph No. 2, until the warehouse crew is ready to roll one off to the left for storage or to the right for immediate shipment, Photograph No. 3.

Rugs for storage are stopped in one of two locations determined by limit switches operated by rolls pushing against metal rods. Unloading positions may also be selected by the operator at the control panel.

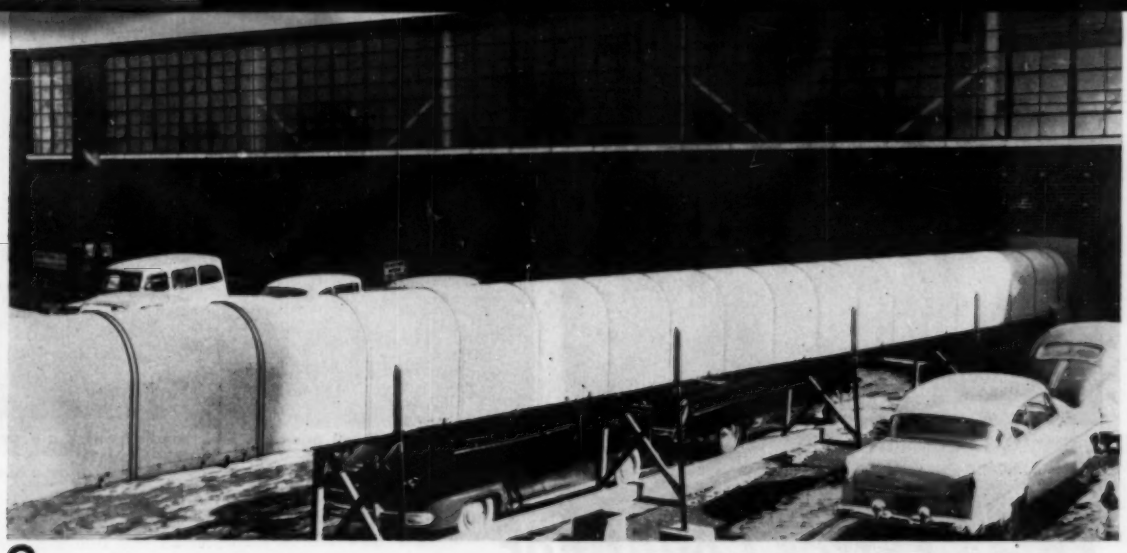
Remove Rugs Three Ways

Then the rugs are rolled onto long special pallets and stored on roller conveyors until they're picked up by crane-mounted lifting arms and placed on a Trac-Rac.

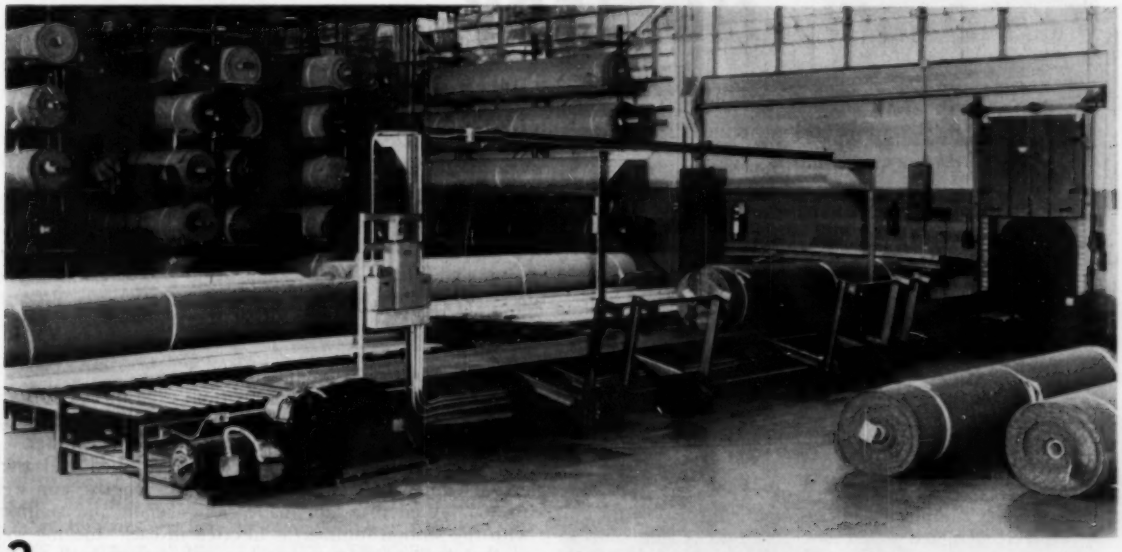
Short rolls of carpets, 27 or 30 ins. long, are unloaded off the end by the short section of roller conveyor shown in Photograph No. 3.

Rolls for immediate shipment are positioned by a limit switch at the cradle, as shown in Photograph No. 4. The crate is moved to the cradle, the cradle is tilted, the rug is rolled in the crate, and the cradle with the crate and rug is turned back to the original position onto the floor truck.

In addition to the limit switches to stop the rug rolls in the proper position for removal, other limit switches are operated by the last roller of the roller conveyor at each end of the belt when the rolls approach the end.

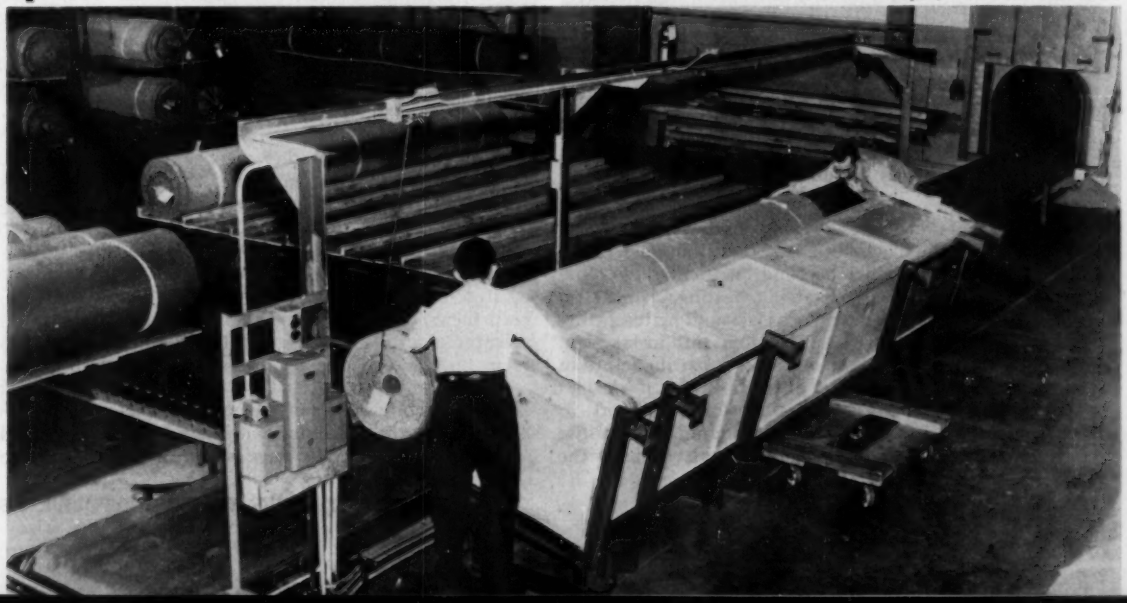


2 TUNNEL with conveyor belts inside is used for temporary storage and for transporting the rugs to the new warehouse.



3 RUGS FOR STORAGE in the warehouse are stopped in one of two positions by limit switches. A crane removes the rolls.

4 RUGS FOR SHIPMENT are rolled into a crate. A cradle revolves the crate on its side to receive the roll, and then it tilts back.



OPERATORS' FINGERNAILS are kept in perfect condition by two full-time manicurists.

UNIFORMS worn by all operators who handle hosiery are designed to prevent picks, pulls, and snags.

These Extras Count For Top-Quality HOSIERY

Attention to details at Archer Mills pays off in better full-fashioned hosiery. Better working conditions also result from techniques that include—

- Heat-exhaust systems
- Air-cooled preboarding
- Knitting-machine temperature controls

By JAMES H. BLORE, Associate Editor, TEXTILE WORLD

Archer Mills, Inc., Columbus, Ga., has been in the full-fashioned hosiery business a long time. During that time, the mill has recognized that attention to details in manufacturing is necessary to turn out a top-quality product.

For instance, all girls who work on hosiery at Archer wear identical uniforms. These bright blue-and-white uniforms were designed to prevent snags, picks, and pulls in fine-gauge hosiery; and they have also proved beneficial from a psychological standpoint.

Smoking areas for knitters are positioned at the end of each knitting alley so that the knitter can keep his eye on his machine at all times. Knitters can smoke when they wish provided they stay in the smoking area.

A quality incentive system operates in the knitting room. A Boardmaster system is set up at the entrance to the knitting room. Colored cards show the percentage of faulty stockings returned to each knitter by the menders. These cards are changed once each month.

Temperature Controls Reduce Needle Breakage

Honeywell differential-temperature controls have been fitted to 66-gauge machines to compensate for center-bed expansion when the machines are started from cold. Sensing elements on the center bed and on the base are connected to a relay, which operates a heating element on the center bed. Less needle breakage and better-quality hosiery are two advantages gained from this installation.

The quality-control section at Archer is partitioned from the knitting room to reduce distractions when quality-control workers are engaged in such exacting work as counting stitches. One man, who is familiar with the knitting machines, is helped by three girls to keep the machines producing top-quality stockings.

One girl collects 30 stockings from each of the 50 knitting machines twice weekly. These stockings are tested on the Rolande tester and the Premier selvage tester.

These test stockings are dyed and finished and then checked for needle streaks, leg and heel lengths, and welt stretch. A circular tab, made from Teflon and stamped with the section number, is inserted in each stocking welt so that faulty stockings can be easily traced back to the machine.

Machines Cleaned Monthly

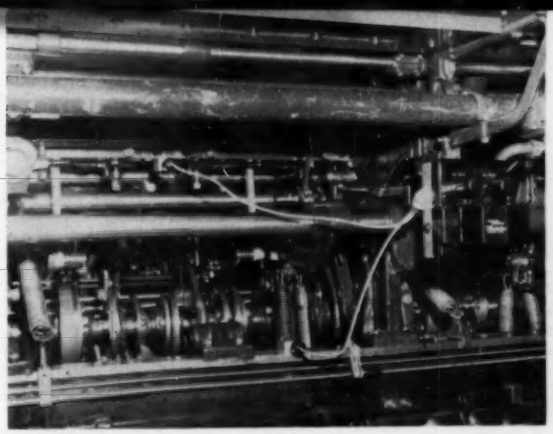
Each machine is thoroughly cleaned every month by a special cleaning crew. Except for the needles, sinkers, dividers, and frictions, which are the knitters' responsibility, the crew cleans the whole machine. Clean emulsion troughs with new felts are replaced at this time with spare sets that are kept on hand.

Archer was the first hosiery mill to air condition knitting rooms, and today this practice has been extended to the finishing room and the offices. Three different air-conditioning systems are used. The air is cleaned by electrostatic filters that are continually cleaned with filtered oil.

Foxboro controls in the knitting room keep the temperature at 84° F. and the relative humidity to 48%. To keep these conditions constant, hot air from the knitting-machine electronic controls is exhausted from the knitting room by 6-in.-dia. lagged pipes.

The pipes are connected to a central duct above the knitting machines to a fan in the wall. This fan draws the hot air from the machines and blows it outside the mill.

After knitting, all stockings are treated in a steam box



ELECTRONIC CONTROL has sensing elements on the center bed and base to reduce temperature variations.

to set the stitches. One girl checks each lot from the knitters and ties each dozen at the welt with a colored tie band to keep each lot separate.

Preboarding Room Kept Cool

A spot-cooling system keeps working conditions pleasant in the preboarding section. Air from the outside is drawn through a duct and blown over the Paramount preboarding retorts through a narrow orifice.

The hot air is blown through the windows at the rear of the retorts. An exhaust over each bay in the preboarding room helps get rid of hot air that rises to the ceiling.

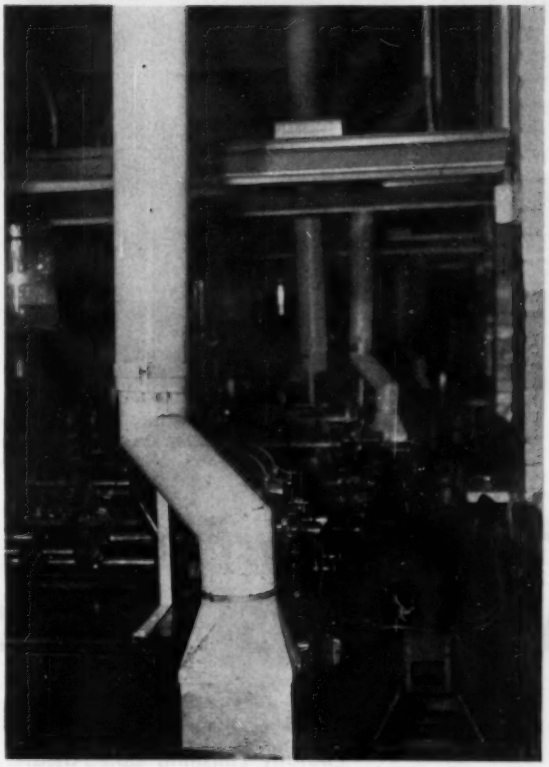
Refrigerated air is blown over each preboarder's station through a triangular duct. The outlets on the ducts are regulated to serve the needs of individual operators.

To give the welts a snug fit on the preboarding form, they are wet with a brush dipped in water before they go into the retort. Clean water for this job is constantly supplied to a trough near the forms.

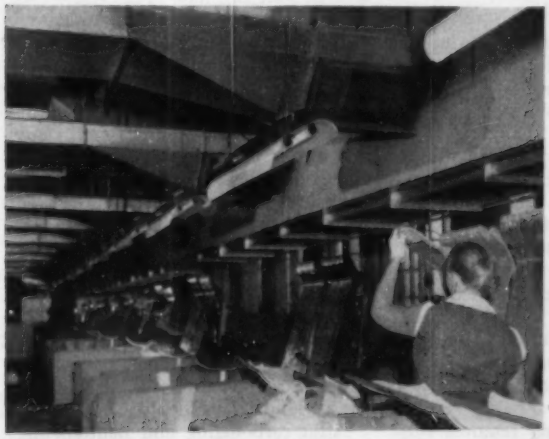
The forms have grooves on their edges to keep seams straight and neat. When each dozen pairs of stockings have been preboarded and drawn from the forms, they are laid on aluminum trays behind the operators.

Pull threads in the finished product are removed with the Marvel mending machine, and the stitches are reset and pressed flat with a Teflon-coated iron to remove the sheen caused by working the stitches back to position.

Two full-time manicurists keep operators' hands in condition to handle fine-gauge hosiery. One manicurist works in the finishing room, and one is in the seaming room. All operators' hands are inspected twice weekly.



HOT AIR from the knitting-machine controls is drawn through ducts by a fan and blown outside the mill.



REFRIGERATED AIR is blown over each preboarding station. The ducts can be adjusted to each operator's requirement.

PULL THREADS that are removed in the final product are treated with a Teflon-covered iron to prevent undesirable sheen.

FULLING is one of the important operations in wool finishing. Here the pieces, soaked in a soap solution, pass between nip rolls into the trap, where a certain amount of compression occurs, and then fall into the box below and return to the nip.

How Botany Finishes WOOLENS and WORSTEDS

• Botany Finishing Co., Passaic, N. J., is operating one of the few completely equipped wool-finishing plants in the country. Here's how it handles the fulling, teaseling, napping, and shearing of a line of expensive fabrics—

By **ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

LITERALLY HUNDREDS OF YEARS of experience plus the availability of a complete line of wool-finishing machines help the new Botany Finishing Co. produce an expensive line of men's and women's wear.

The Passaic, N. J., plant operates in the old Botany Worsted Mills and draws its help from a pool of employees long versed in woolen and worsted finishing. Average employee experience is 20 yrs. and average age 50 years.

All goods are first given a thorough examination in the gray condition and burled and mended where necessary. At this time a master card is made out, on which all details of the piece are noted—length, width, weight, imperfections, and general condition. Pieces are classified also as to suitability for light or dark shades.

Next, fabrics such as cashmeres, alpacas, and others classified as face-finish fabrics are tacked face in for fulling. Tacking protects the face from the pressures and compaction of the fulling mill.

Fulling Starts Finishing

The goods are then run through a pad containing a high-titre soap plus soda ash; enough liquor is left in the goods so that they are wet but not dripping.

The pieces then go to the fulling machines, and at this point the experience of the finisher comes into play. How long to full, how much weight to put on the trap, and what roll pressure to use are matters of judgment for each weave and the desired finished effect. From 30 mins. to 5 hrs. may be required. Here the foundation for the finish is laid.

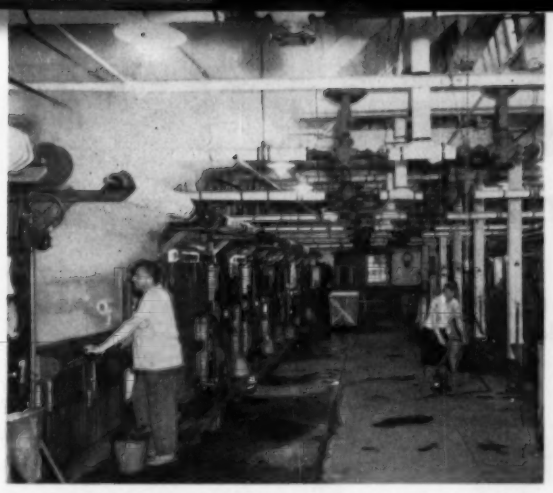
After fulling, the goods are given a thorough washing in a James Hunter dolly washer. Washing removes fulling soap, wool grease, and dirt. Temperatures of 110 to 130° F. are used; generally no extra soap is necessary.

Face-finished goods are then detached and given a wet gigging operation to start the nap. Teasels are the napping medium, and the number of runs at this point vary with the fabric and desired finish.

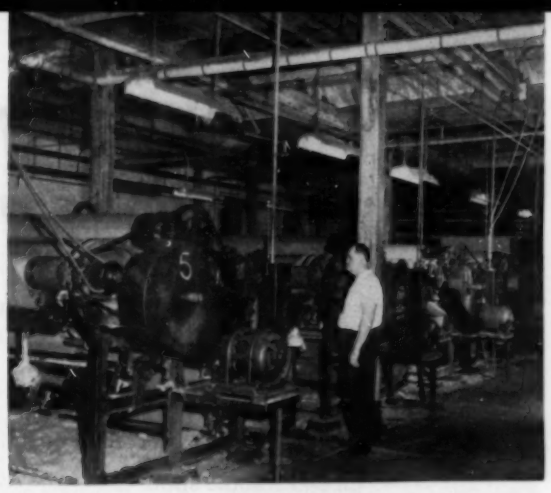
After wet gigging, the goods are padded through a weak solution of sulfuric acid, vacuum extracted, and run through a James Hunter dryer in one continuous operation. Temperatures in the dryer are maintained at 200, 230, and 250° F. progressively from entering end to delivery.

As the water evaporates, the acid becomes more concentrated and all cellulosic material trapped in the wool is reduced to a fine powder. An alkaline scour in a continuous rope soaper neutralizes the fabric and washes out the carbonized material.

After carbonizing and neutralizing, some styles are wound on perforated stainless-steel shells while still wet and



PIECE DYEING in this range of stainless-steel kettles equipped with automatic temperature controls is the principal means of dyeing the type of fabrics handled at Botany.



WET TEASELING on a four-unit range is the primary means of raising a nap on face-finished fabrics. Skill in the choice of teasels and machine settings produces silky naps without undue weakening of the fabric.

are wet decatized. In this operation, boiling water is pumped through the fabric. The goods are wound face in, and the action is one of setting the preliminary nap or face produced in wet gigging.

Then the goods are ready for piece dyeing. Some styles are now tacked again, to protect the face. Dyeing is done in stainless-steel becks with deep, short boxes. Botany's dyeing machines are equipped with temperature recorders and controllers.

How Finishing Is Done

It is after dyeing that the work of producing a soft, lustrous face on coating fabrics really begins.

One of the most important operations is wet teaseling in a series of four teasels connected in range. The teasel burrs themselves are mounted in slats or racks, and the condition of the teasels—whether new, old, or at intermediate stages of wear—determines their position in the range. Generally, slats with new teasels are spaced in with older teasels until broken in. In the wet teaseling process, some slats are permitted to become loaded with nap to exert a polishing effect on the face of the goods.

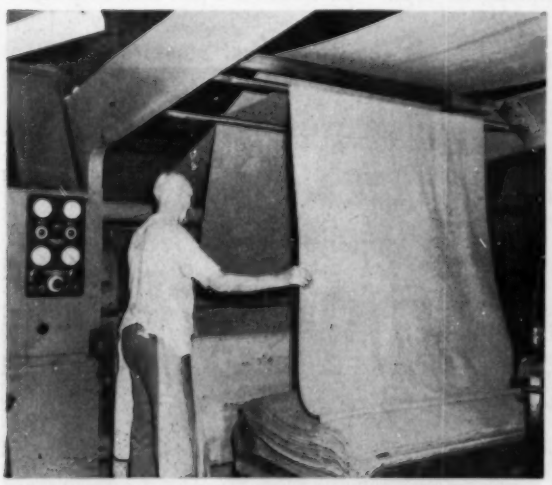
The four-unit teasel is the principal machine used to produce a good face, and some goods get a second run on this range after wetting out between runs.

To produce a close, even face on flannels, a Gessner napper is used. Settings on this machine are made through a panel board that controls speed, worker energy, and contact area. Allowing for unavoidable variations in fabrics, the napper can be set from previous records to produce the same effect time after time.

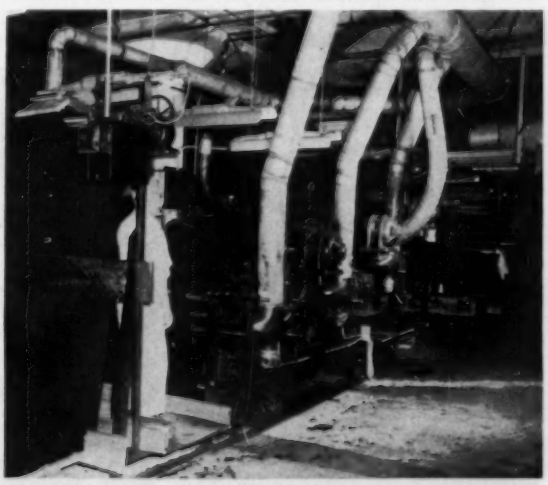
Shearing Evens Face

At various stages of teaseling or napping, some fabrics are run through a four-bladed shear; this operation also frequently is the final one in producing a face-finished fabric. Shearing removes long fibers that may have been pulled up by the teasels or napper wire, and the machine is usually set to produce an all-over cropping so that the nap appears dense and uniform.

Final inspection at Botany is painstaking and thorough. Every trace of lint, bits of thread, or other foreign matter is brushed off the face of the goods, and the fabric is graded piece for piece against the original condition as noted on the inspection card made up at the gray inspection.



GESSNER NAPPER is a modern machine that can be set to reproduce results consistently. Flannels and broadcloths can be successfully handled on nappers.



SHEARING on a four-blade machine takes off long fibers and crops the nap slightly to produce an even, dense surface. Some fabrics are sheared between runs on teasels or nappers.

Break Down REPAIR FIGURES To Evaluate Looms and Fixers

The accumulation of data showing the frequency, cost, and downtime involved in the maintenance of each loom part can be useful in a number of ways. It can—

- **Aid in loomfixer training**
- **Help predict costs and output**
- **Pinpoint trouble spots**
- **Eliminate guesswork in job layouts**

By WILMER C. WESTBROOK, Assistant Editor, TEXTILE WORLD

You know the number of looms assigned to your loomfixers, and you are probably aware of the mechanical condition of the looms. But do you know how much of a fixer's time is spent, and the labor cost, in the repair and maintenance of each part of the loom?

This approach to loom maintenance has been found to have definite advantages. Of course, figures gained in one mill will be practically valueless in another because of the many differences in the types of looms, speeds, fabrics woven, looms per fixer, etc.

How Fixer's Time Is Spent

For average looms under normal conditions, a breakdown of the percentage of time spent on each part of a cam loom would be about as follows:

Picking motion	36%
Drive, brakes, and shafts	27%
Filling-changing mechanism	8%
Boxes, binders, protector motion	7%
Warp and filling stop motions	5%
Take-up motion	4%
Let-off motion	2%
Shedding motion	1%
Miscellaneous	10%

Box looms, dobbies, and looms with special attachments or on special weaves will of course differ radically. Also, the many variables involved from mill to mill on the same type of looms will cause a difference in the amount of time required for repair of each motion or part.

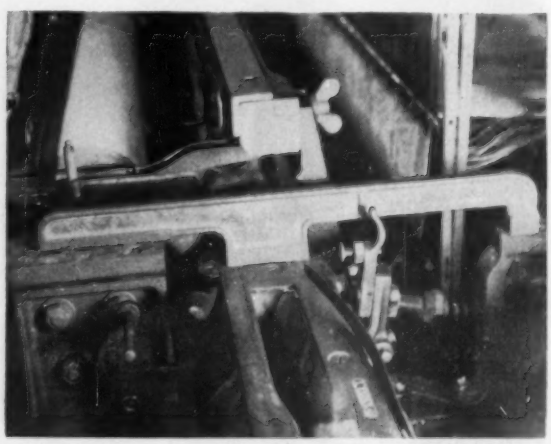
So an individual study of loom repairs in a particular mill is necessary to obtain really worth-while information. Once this data is available, it can be used to advantage in a number of ways.

1. Job Layout

A better layout of sections can often be made to better utilize each loomfixer's time. It will be often found that although two sections have about the same number of flags per shift, the actual time spent making repairs will vary greatly due to location, availability of parts, and mechanical condition of the looms.

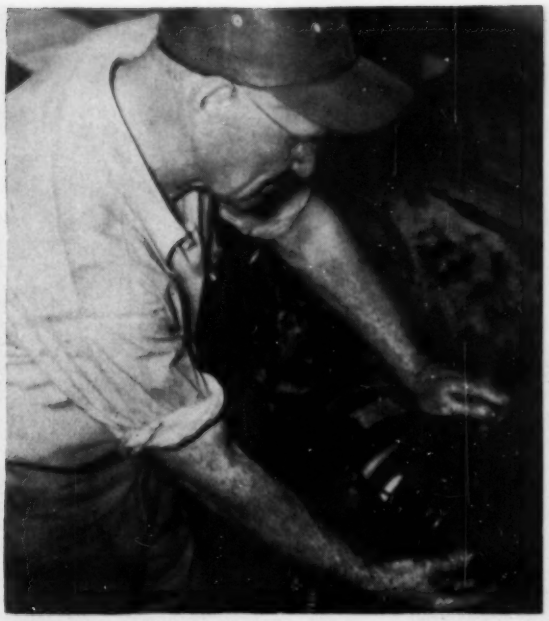
For instance, if a loomfixer must spend five minutes going to the supply room for a part that normally re-

REPAIR JOB on drive, gears, and shafts may require as much as 16 manhours of labor.



GAUGE such as this lay height gauge must be used for some repairs and requires much time.

LOOMFIXERS spend much time repairing and maintaining auxiliary attachments such as this pick counter.



PRECISION is required in fitting many loom parts, and this kind of work cannot be rushed.

quires two minutes to install, he is placed at a disadvantage compared to the loomfixer who has a section located near the supply room.

The mechanical condition of the looms will also make a big difference in the amount of time needed to make each repair. If many of the loom parts are worn, the installation of a new part may require the setting and adjusting of several related parts.

A record of repairs made and time required for each repair will show something of the mechanical condition of the looms on each section and will also give some insight as to the competence and efficiency of the loomfixers.

2. Highlight Trouble Spots

Some of the loom parts, such as the drive, require only infrequent attention and yet consume much of a fixer's time because most of these repairs are in the nature of a major overhaul. Dozens of repairs to feelers, shuttles, thread cutters, and temples can be made in the time required to reline one clutch.

The frequency and severity of the failures of parts such as the drive, shafts, gears, etc., as shown by a study, may indicate the need of a special overhauling crew to handle this type of work.

On the other hand, it may be shown that the loomfixer's time is occupied with small jobs such as adjusting checkstraps, filling feelers, and thread cutters. A closer study may reveal the fact that he is going back to the same loom time after time, that he is doing his work by the trial-and-error method. Or it may be disclosed that some of these small parts are the wrong ones for the job and that much time and money can be saved by substituting another part.

3. Aid in Training

A knowledge of the loom parts and motions that give the most trouble is an invaluable aid in the training of loomfixers. Time can be spent in instruction in proportion to frequency of breakdown and skill required, and the loomfixers can be better shown what to guard against.

For instance, if it is shown that warp stop motions are causing a lot of trouble, it might be well to give some special training on stop motions.

On the other hand, if a part such as the worm take-up drive gear is very seldom repaired, it will be a waste of time to give elaborate instructions that will probably be forgotten before the need arises to use them.

A study of the time required for each repair will provide a basis from which to work out faster methods to teach new fixers and also retrain the already experienced ones. Short cuts in procurement, installation, and adjustment of parts should be passed on to all concerned, not hoarded as trade secrets.

4. Evaluate Cost Factors

Accurate data pertaining to number of repairs, parts used, and time needed can also be helpful in forecasting costs, downtime, maintenance schedules, and other operating information. The supply room can better control its inventories of parts; and the shop can schedule its cutting of shafts, gears, etc. After records have been kept over a period of time, a close estimate can be made of the parts needed next month or even next year.

Of course there is nothing constant in a weave room except change, and changing a loom from one style of fabric to another often entails some change of basic parts. Style changes must be taken into consideration in reviewing any loom-repair figures. But knowing how a loom will be affected by a style change is useful, too.

If you have a block of looms that are to be changed from a plain weave to sateen and you already have figures available from other changes showing the loom parts to be changed, the time needed for each part, and also operating data for sateen weaving, the change-over will be greatly simplified. The data can be useful in estimating the weaving cost before the first yard of cloth is woven.

5. Gives True Picture

Knowing the time required to repair a loom part and the frequency of failure can help explain some of the seeming inconsistencies of production.

For example, if there is a 5% difference in the output of looms weaving soft-filled sheeting and of looms

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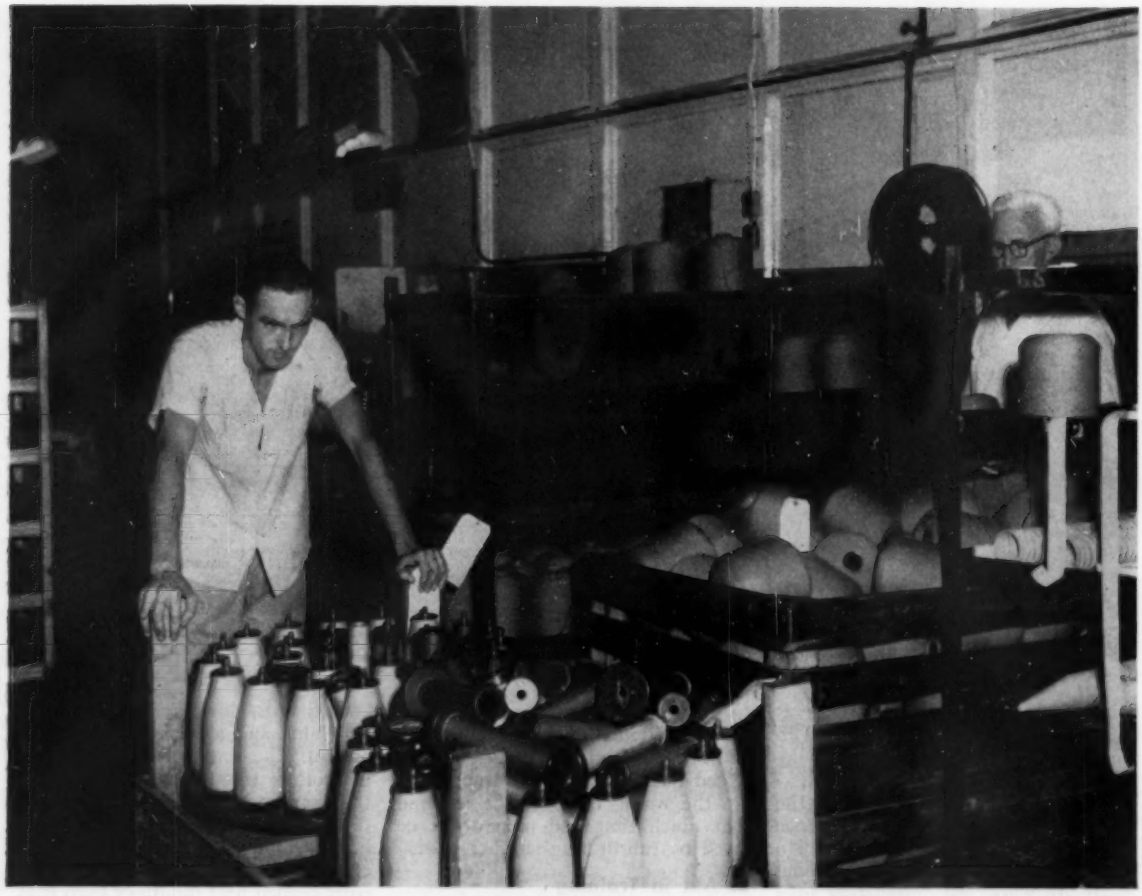


HAND TRUCKS are used to handle yarn in the shipping room.

Good YARN PACKING Protects Valdese Shipments

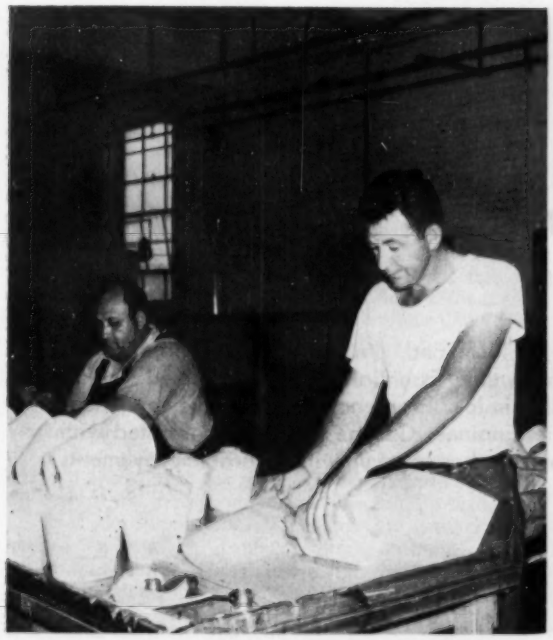
• Valdese Mfg. Co., Valdese, N. C., packs and ships over 250,000 lbs. of yarn per week and almost never has a damage complaint. Here's how it's done—

By **WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

Valdese Mfg. Co., Valdese, N. C., packs and ships over 250,000 lbs. of yarn each week and has not had a serious damage complaint in several years. This record is credited to careful packing and handling in the shipping department and to the use of substantial corrugated shipping boxes and reliable carriers.

Natural yarn is handled in a room separate from the bleached and dyed yarn to prevent possible contamination of fibers. Dyed and bleached yarns, until ready to ship, are stored in separate bins, carefully identified as to yarn number and characteristics.

Before shipping, all yarn is conditioned to approximately 3% regain. There are two H&W conditioners located in the shipping room that have a capacity of 1,200 lbs. per hr. each. Yarn is transported by hand truck directly from storage or the winders to the conditioners.



YARN IS WRAPPED at a high rate of speed after conditioning.

CARTONS are weighed after being secured with three steel straps.

ADDRESSES are stenciled on the boxes before shipment.

MOTOR TRANSPORT is selected by top Valdese management.

Yarn to be shipped less than 100 miles usually is not wrapped in paper unless the customer specifically requests such a wrapping. If the distance is greater than 100 miles, either all or every other tube or cone of yarn is wrapped according to specifications. All packages of yarn for export are wrapped.

Two men wrap and place the yarn in corrugated cartons at high speed. A carton containing 75 wrapped tubes or cones is filled in about 6 mins. Only a few seconds are required to assemble and strap the cartons, which are then weighed, stenciled, and hauled to the shipping platform.

The majority of the yarn is shipped by motor transport selected by Valdese management for efficiency, speed, and number of transfers involved. Usually, one transport company handles the majority of the shipping as long as its services are satisfactory.

To Cut FINISHING COSTS — Minimize Stop and Go

Richmond Piece Dye Works at Richmond, Va., processes synthetic-fiber fabrics in men's and women's wear. Essentially batch-processed goods, these fabrics are seldom handled in lots large enough to achieve continuous operation. But Richmond's Chief Engineer George Haeblin, confronted with high labor costs and space problems, has come up with several improvements that—

- **Reduce handling**
- **Cut costs**
- **Improve quality**

By ROBERT W. PINAULT, Assistant Editor, TEXTILE WORLD

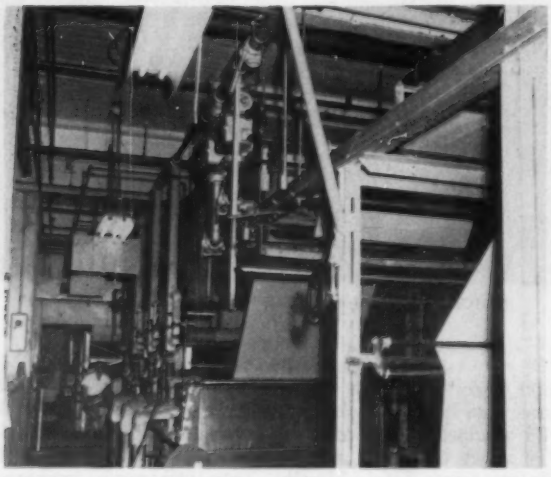
Richmond Piece Dye Works, Richmond, Va., has applied mechanical ingenuity to solving two of the problems peculiar to batch processing—downtime and high costs.

The plant handles men's and women's wear in a wide variety of fabrics made from viscose, acetate, Dacron, wool, and blends of these fibers. Finishes include plain, napped, resin, and combinations of these types.

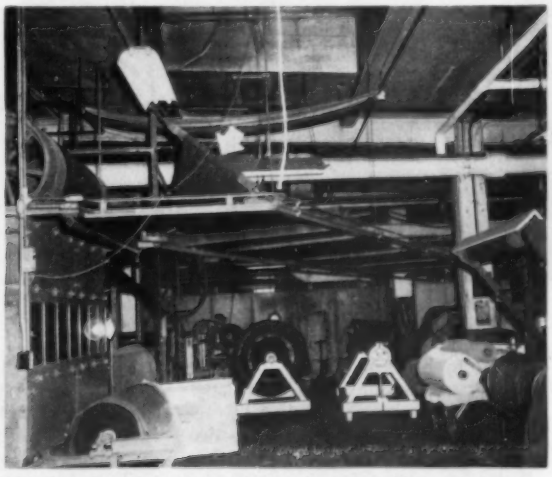
As business developed over the years, space was at a premium and continuously rising labor costs became a problem. The answer was more continuity of processing, to follow cotton bleachery practice as far as possible.

The bulk of the fabrics handled require singeing, desizing, and a preliminary boil-off. Richmond tackled this problem from two angles—space saving and labor saving. The singer was located overhead, leaving space below for a J-box and room to sew up piece ends into batches.

A Rodney Hunt Tensitrol washer with four compart-



SINGE-DESIZE RANGE, a compact unit that includes a four-box Tensitrol washer, prepares most goods adequately for dyeing without further treatment.



GOODS ARE CONVEYED from treating tenter in background into curing looper. Rollers set at a 45° angle at tenter and looper (arrow) turn fabric 180°.

ments carries desizing material in the first box and scours and rinses in the other three. Two men and approximately 45 ft. of space are required for this preliminary operation.

If further scouring is necessary, a large three-section rope washer is located nearby. Most goods go directly to the becks or jigs from the singe-desize range.

One Roll Equals 5,000 Yds.

After the goods are dyed, beck-dyed fabrics are placed under a detwisting and opening range that extends to the second floor and delivers goods to a pad and batcher to get them ready for drying. In this way the goods transport themselves from the first to the second floor without extra labor. On the batching operation Richmond's Chief Engineer George Haeblin designed and built a special batcher that can handle 5,000-yd. rolls easily.

A heavy frame mounted on casters is run up behind the pad, and a shell and center bar is mounted in ball-bearing supports. The cloth is led through the pad and started on the shell; and a chain-driven contact roll, powered by the pad, is lowered onto the goods. When the pad is started, the contact roll moves the shell and the batch is made.

When the lot or lots is rolled up, the contact roll is hoisted off and the batcher carriage trundled to the tenters or loopers. The big rolls cut change-overs down by at least 50%.

Treat and Cure in One Run

Continuous treating and curing is very common practice, particularly when you can lay out the machines in a row with plenty of working space. But one of Richmond's treating ranges, a pad-tenter setup was parallel to and 75 ft. away from the curing looper the company had decided to use for curing.

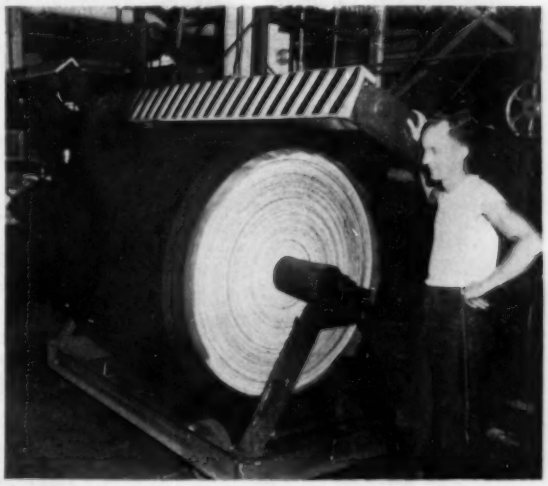
So again, Mr. Haeblin was called in and came up with a quarter-turn mechanism that delivers the cloth free of wrinkles onto a roller conveyor that carries the cloth to the looper across the room. There another quarter-turn roll repositions the cloth so that the curing looper feed roll can handle it.

To finish the job, cloth from the curing looper is similarly led to a short steaming frame situated between the treating frame and the curing looper.

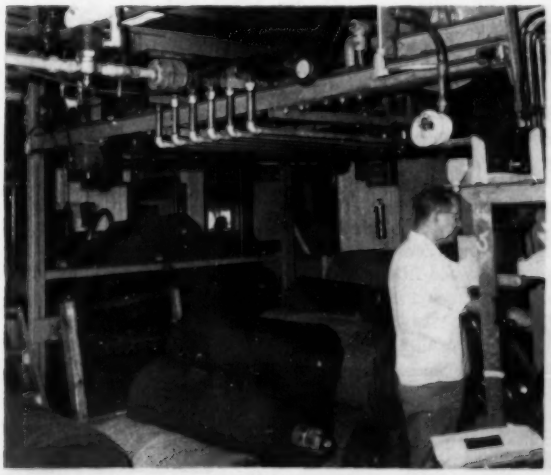
This setup has given continuity to the resin-finishing operation—an important factor in uniformity of finish—and at the same time has cut labor costs exactly in half.

In one other treating-curing range that is set up in tandem, Richmond has mounted a very short tenter chain over the delivery end of the curing looper. The unit is complete with steam jets, gas-fixed heater, and cooling cans. Fabric coming from the looper can be smoothed, brought to width, and delivered cool onto the batcher with no more labor than is necessary to watch the looper alone.

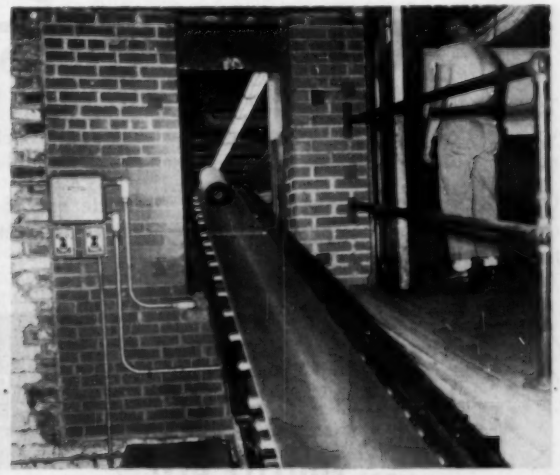
Where Richmond had formerly trucked finished goods to a building across the street, now a conveyor takes the examined and wrapped goods to a building behind the examining room. Invoicing, packing, and loading into trucks is done in this building. Overnight delivery to New York puts Richmond in as good a delivery position as many dyehouses that are nearer to the metropolitan area.



KING-SIZE BATCHES, built up on special portable stands, cut down-time in drying. Drive is by chain behind guard at operator's right hand.



FINISHING TOUCHES are applied after curing—with no extra labor—by a miniature steaming tenter and cooling cans set up at the delivery end of the looper.



CONVEYOR TO WAREHOUSE moves fabric to invoicer and packer for the examination department. Before alterations, all finished goods had to be trucked across the street.

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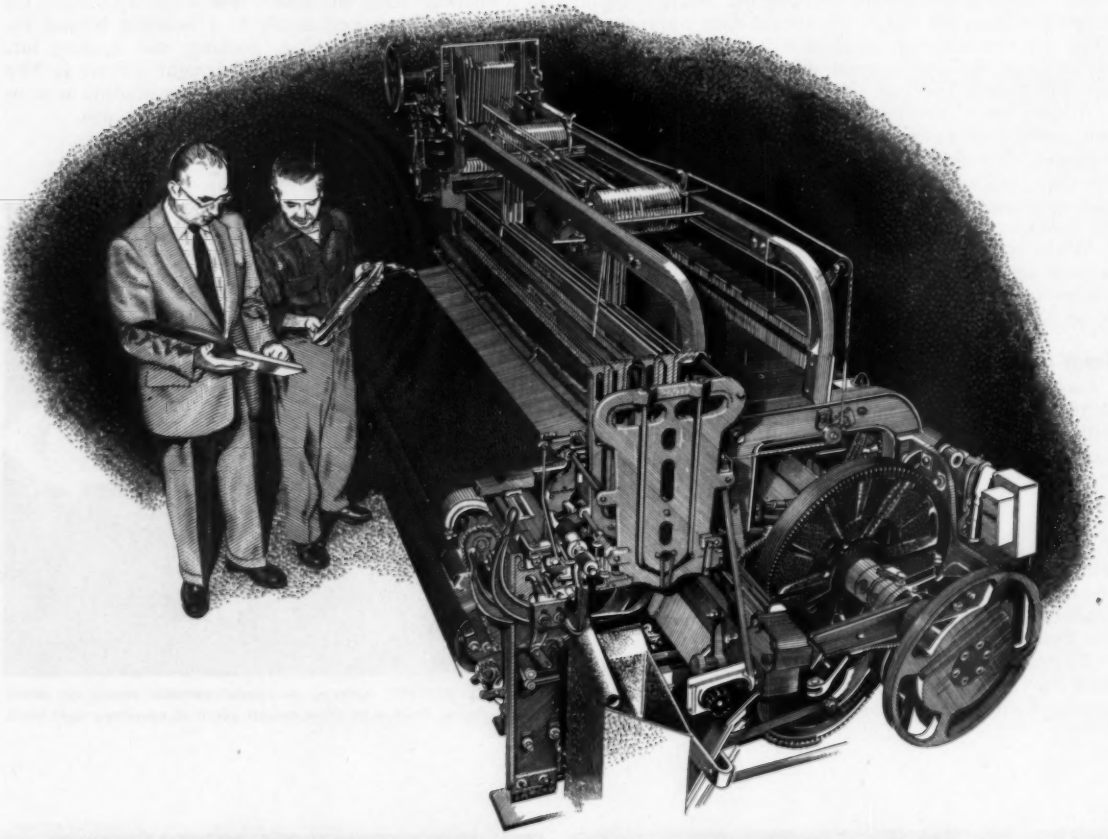

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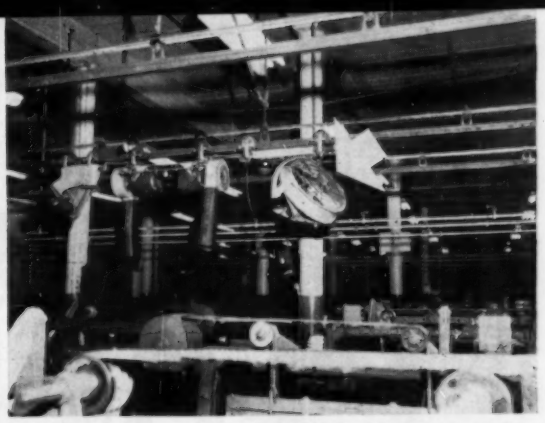
AMERICAN MONORAIL CLEANER (arrow) makes a cycle over 64 looms every 8 mins. All manual cleaning between warp-outs is eliminated.



CEILING CLEANER (arrow) trails the loom cleaner and is attached to it. Overhead cleaning is reduced more than 30%, but walls are cleaned.

Avondale Mills Tests MECHANICAL LOOM CLEANING

• Before jumping in over its head, Avondale Mills' Birmingham Plant is making a thorough test of a mechanical loom cleaner on a small group of looms. Here are the results of that test over a one-year period.

By RICHARD B. PRESSLEY, Associate Editor, TEXTILE WORLD

AN INSTALLATION of a mechanical loom cleaner on 64 looms at Avondale Mills' Birmingham Plant is serving as a test. If successful, the test will result in equipping 622 looms at Birmingham with the cleaners.

After a year's operation, the test isn't conclusive. There's a slight gain in the quality of the cloth woven with the cleaner. This improvement comes from less lint and fewer oil spots woven into the cloth.

There are also other definite advantages: (1) the system reduces manual cleaning, (2) there are fewer loom stops, and (3) an auxiliary fan on the cleaner helps keep the ceiling clean.

The cleaner is used on 40-in. Draper E-model looms weaving chambray. The cloth construction is 88x70 with 40s combed warp and filling yarn. Warp yarn is several colors.

There are 105 looms in the section of loom cleaners, but only 64 looms have the cleaners. Two weavers have the 105 looms; one weaver has 52 looms, and one has 53. Before the cleaners were installed, the weavers had 46 looms each.

The new setup results from eliminating manual cleaning by the weavers. Before the cleaner, each weaver cleaned the handrails and harnesses on one-third of her looms each shift. All filling grates were cleaned each shift. Now no manual cleaning is done by the weaver.

Loom Stops Are Reduced

Loom-stop checks before the cleaner showed an average of 42 stops per hour. With the cleaner, the stops have been reduced to 35 per hour.

The cleaner is made by American MonoRail Co. Beam handling is not part of the system, but it will be installed along with the cleaner if the system is expanded to more looms.

A double-head cleaner with an auxiliary fan that blows down the ceiling makes a cycle over two complete alleys of 32 looms each. A cycle is made every 8 mins.

The overhead fan is only partially effective because overhead cleaning still has to be done; but the ceiling is not cleaned as frequently as adjacent areas without the cleaner, which are cleaned every three weeks.

From a visual comparison, the ceiling with the cleaner that had not been cleaned for two months was as clean as a nearby area of ceiling that had been cleaned only three weeks before.

There are two disadvantages to the cleaner: (1) the walls have to be brushed down occasionally because of clinging lint, and (2) the cleaner has to be stopped when warps are tied with a portable tying-in machine to prevent blowing the ends being tied.

The cleaner does not disturb the filling yarn at the loom battery although the air stream from the heads is pretty strong. Loom-stop checks have not indicated any trouble from this source.

Maintenance consists of cleaning the inside of the blower sections once a week, which is about a 5-min. job.

The weave-room temperature is 80° F., and relative humidity is 80 to 84%. The chambray with the cleaners can be woven with the relative humidity as low as 78%, but fabrics on nearby looms need more humidity.

The weave room has an American Moistening Co. air-changing system with atomizers; it is not refrigerated.

The looms have clock-spring-top harness motions, one side-fork filling stop motion, and electric warp stop motions. Harnesses are Drawtex type, and four harnesses are being run on the present styles of cloth.

Manual Cleaning Is Reduced

On the small installation of 64 looms, manual cleaning eliminated has not been great. But on 622 looms,

CONTINUED ON PAGE 194

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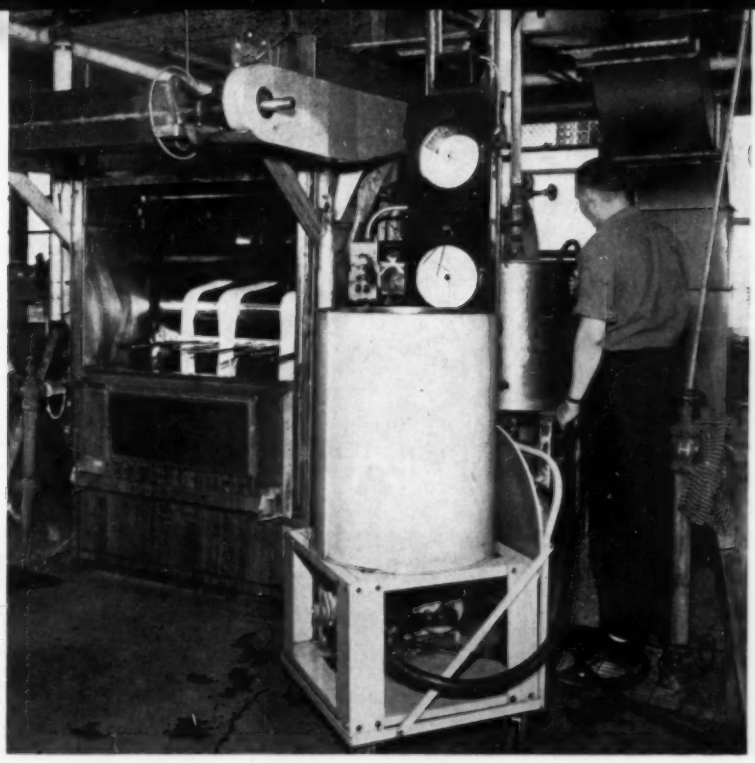


PORTABLE MIXER equipped with delivery pump dissolves dyes and chemicals quickly and then pumps the solution to the storage tank at the beck. The mixer can handle up to 50 gals. of dye liquor and cuts mixing time to 10% of that required by bucket-and-steampipe methods.

At Munsingwear— DYES Mixed Without Steam

One of the critical jobs in dyeing is getting large quantities of dry dyestuff properly dissolved or dispersed before adding them to the dyebath.

Munsingwear solved this problem with a mechanical mixer that—

- **Cuts mixing time to seconds**
- **Produces more-uniform solutions**

By SAM LITTLEJOHN, Chief Engineer, Munsingwear, Inc.

AN IMPROVED METHOD of mixing dyes has resulted in better work and considerable saving of time at Munsingwear's Minneapolis dyehouse.

As all dyers know, the introduction of large quantities of dye to the dye kettle is a critical operation; and solution or dispersion must be complete, or dye specks are sure to follow.

Munsingwear had been following the usual custom of boiling color in pails or drums and adding the solutions to a storage tank mounted on the dyebeck. This was a hand operation and often resulted in splashing color where it wasn't wanted. It was also somewhat dangerous. Furthermore, it took from 40 mins. to 1 hr. to mix and transfer some of the dark-shade formulas to the beck.

For the past year the plant has been using a Pako mixer for getting dyes into solution. This machine, developed by the Pako Corp. of Minneapolis, is a portable unit that dissolves or disperses the dye and pumps it to the storage tank on the beck.

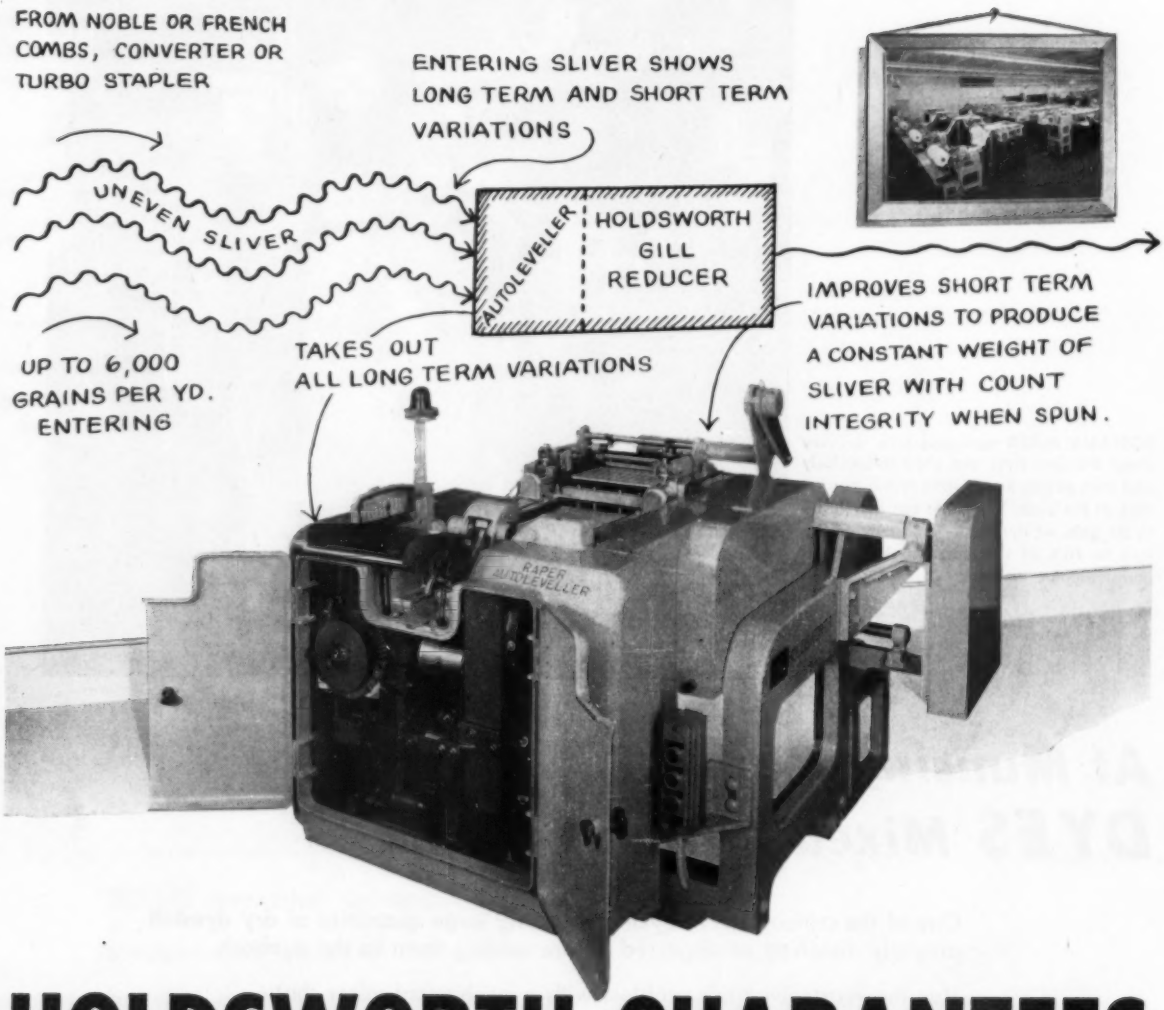
Mixing is practically instantaneous with the new method, and the solution can be pumped to the storage tank in 1 to 2½ mins.

Mixes Are Uniform

One of the important improvements Munsingwear has had from this method of dye mixing is that very uniform solutions are produced time after time. The human element involved in boiling up a pail of dye mixed with water has been replaced by a mechanical device that does a better job.

To get these results, Munsingwear adds the dry dyestuff or chemicals to the required amount of warm or cold water and starts the mixer. Jet-impingement of water on the material to be dissolved produces solutions in a hurry. No extra steam is necessary.

Because the mixer works anywhere, it can be plugged into a 110-v. outlet, anywhere in the plant. Dyes can be mixed away from the dyeing machines if necessary, then wheeled to the beck when it is wanted, and pumped into the storage tank.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A new high-speed, single-head, heavy-duty Holdsworth Gill Reducer for single can or single ball delivery, is now available equipped with the *Prince-Smith & Stells'* Raper Autoleveller.

Although any Holdsworth Gill Reducer materially improves short term unevenness, the Autoleveller-equipped machine will also rectify long term variation, thereby allowing weight and count integrity in the roving and spinning operations.

Autoleveller Gill Reducers when used after Noble or French Combing show considerable increase in efficiency, thereby greatly increasing production of that operation, and allowing the top maker to deliver a top of maximum evenness and guaranteed weight.

When used in the first drawing operation, the machine rectifies existing unevenness from dyeing, blending or recombing.

This new machine is a heavy-duty type, allowing ingoing weights up to 6,000 grains per yard. Please write for further details.

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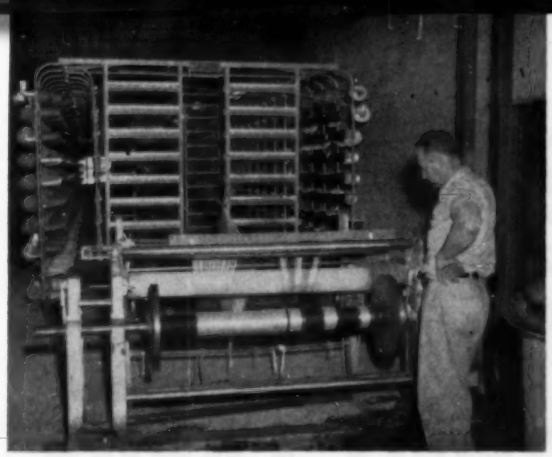
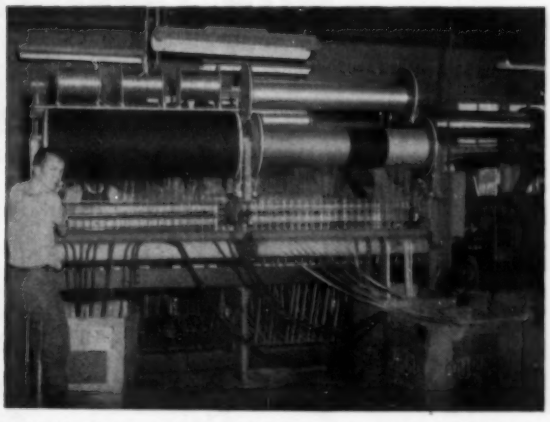


BEAMER winds warps from cones of yarn placed on magazine creel.

FILLING YARN is placed on the quills by these high-speed quillers.

LOOM is weaving webbing for mattress binding at 4 yds per min.



WARPS of cotton, rayon, and Lurex are mounted on this loom.

How BINDING Is Made At Va-Do Fabrics' Mill

• Va-Do Fabrics, Centre, Ala., produces almost a million yards of binding every week. Here is an outline of the plant's equipment and operation—

By **WILMER C. WESTBROOK,** Assistant Editor, TEXTILE WORLD

THE VA-DO FABRICS MILL of Bechik Products, Inc., located at Centre, Ala., produces almost a million yards of binding a week, most of it being used as mattress binding. Dozens of styles of binding are produced at the mill; and there are hundreds of different combinations of designs, colors, and materials.

The yarn is purchased on cones. Cotton yarn for both warp and filling is 20s/2, and the rayon yarn is 300 and 600 den. Some Lurex metallic yarn is used for design in the warps, and other yarns such as nylon and various blends are used for special bindings.

Warp yarn is placed on a McBride magazine creel of 1,600-cone capacity and is wound on the yarn beams with a shop-built beamer. The beamer has a speed of 450 yds. per min. (A new Kidde beamer is on order for this operation.) The warp-yarn beams have a capacity of 400 to 500 yds. of cotton yarn and 1,000 yds. of rayon yarn. When warps are replaced on the looms, the ends are twisted together and pulled through the drop wires, harness, and reed.

Filling yarn is placed on the quills in a Glodde high-speed quiller. There

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Modernize

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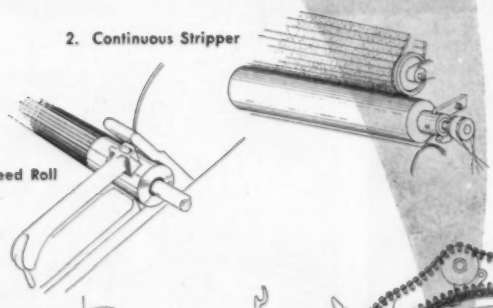
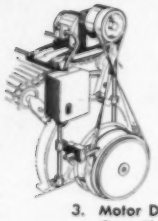
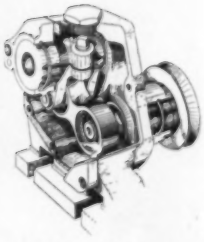


2. Continuous Stripper

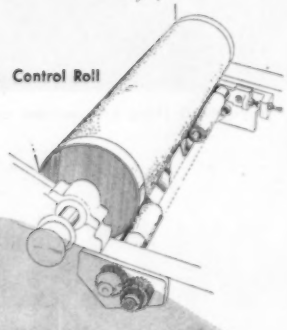
1. Anti-Friction Feed Roll



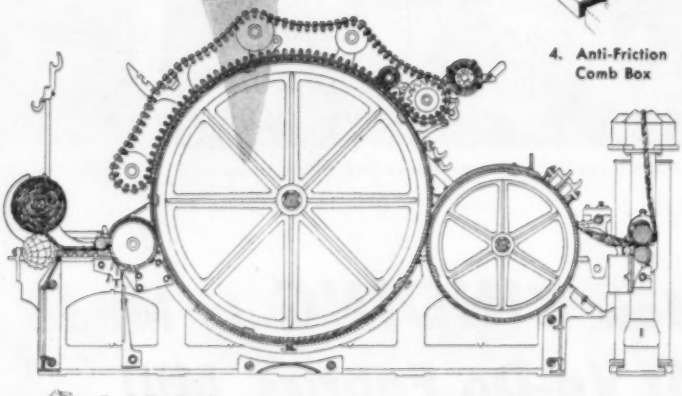
3. Motor Drive Over Flats

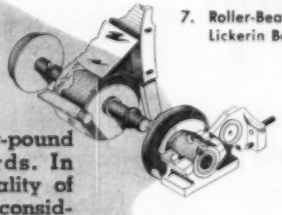


4. Anti-Friction Comb Box

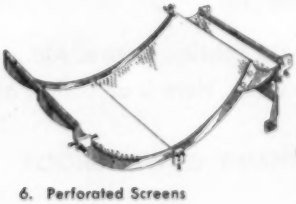


8. Control Roll

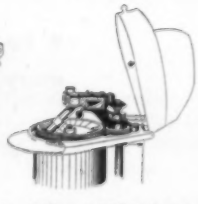




7. Roller-Bearing Lickerin Bearing Assembly



6. Perforated Screens



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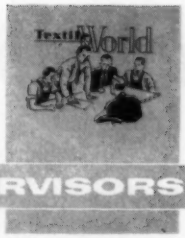


POINTERS for SUPERVISORS

Who Is the "Successful" Supervisor?

• Some new ideas about what makes supervisors successful have come out of recent research studies. They also suggest why so many leadership training programs fail to develop effective leadership.

By **J. E. GARDNER,** Assistant Director of Personnel Research, Fieldcrest Mills, Inc.

What sort of fellow is the successful supervisor and what does he do to bring about his success? How can supervisors of this type be developed?

Industrial leadership, after a long period of neglect, has recently become the subject of research, notably by the Survey Research Center of the University of Michigan and the Personnel Research Board of Ohio State University. In general, the research studies appear to have given us a fairly good answer to our first question and to have suggested the magnitude and difficulties of the second. That is, we can describe the successful supervisor; but we do not know how to train him to be that way. The research findings, however, have identified a major roadblock standing in the way of effective training.

Through comparisons of the supervisors of high-producing groups with the supervisors of low-producing groups, the Michigan researchers have found the high-producing supervisors to be this sort:

They are leaders in function as well as name. They don't do rank-and-file work but instead spend time in such leadership activities as planning, training, organizing, etc.

They are teamworkers. Among their subordinates, there is a team spirit and a pride in belonging to the particular work group.

They delegate authority. They don't check up as much or give such detailed instructions as the low-producing supervisors. The employee has some freedom to decide how to do the work and in setting his work pace.

They are concerned with their employees and tend to be more "employee oriented" and less "production oriented" than the low-producing supervisor. By having a personal interest in employees, being accessible, and training them, the successful supervisors achieved higher production than the supervisors who continually hammered for production.

Since we now know, within the limitations of these studies, what a high-producing supervisor is like, it might seem an easy matter to direct our training to the purpose of remolding our supervisors into this image of the high producer. Certainly remolding is required in many instances; every company has some old-school supervisors whose concepts of supervision are opposed to these research conclusions.

The Problem of Training

The remolding is usually attempted through training courses in leadership or human relations. Although supervisors are learning the terminology used in such courses and give oral assent to the concepts of leadership taught in such courses, there has been a notable lack of success in translating the training into action on the job itself. The training situation and the actual job situations appear to be viewed as in separate compartments; the concepts in one are easily divorced from actions in the other without any strong feeling of inconsistency.

The major problem is not to convince the supervisors —even old-school foremen come to agree with the ideas expounded in the training—but to modify their way of acting.

One part of an Ohio State study by Fleishman explored the extent of carry-over of "consideration" from a leadership training course to the attitudes and behavior of foreman on the job. "Consideration" was defined as "the extent to which the leader is considerate of his subordinates' feelings."

Fleishman found no significant differences in attitude and behavior on the job between foremen who had taken a leadership course and those who had not. He concluded that the foremen's attitude and behavior are related more closely to the kind of boss ("leadership climate") under which the foremen worked than to the leadership training course.

On-the-Job "Climate" Must Be Right

Our own conclusions are fairly obvious. If we are to have supervisors display consideration to employees or act

CONTINUED ON PAGE 182

Back Home from the Greenville Show

Looking Ahead to Our Next

90 Years

Looking back on our first 90 years (yes, since 1866, Garland has been serving the textile industry)

. . . and looking back on one of the best Shows we ever attended . . . has set us to doing a heap of thinking.

Old friends, and new friends we talked with in Greenville, convince us we're good for another ninety and more years.

Right now we're thinking ahead with one purpose in mind

. . . ways of meriting your continued confidence by maintaining Garland quality and service.

This accomplishment is our pledge to you.

THANKS!

Peter A. Garland
Laurence S. Garland Jr.
Frederick L. O'Neil
Frederick L. O'Neil Jr.
Harry P. Garland 2nd

Garland MANUFACTURING CO.

Manufacturers of Rawhide Loom Pickers • Sponge Leather Bunters • Rod Lubricant • Hair-on Loom Leathers • Rawhide Hammers and Mallets.

WATER STREET • SACO • MAINE

← For more data, write this page number on Reader-Service card.

EQUIPMENT and SUPPLY NEWS

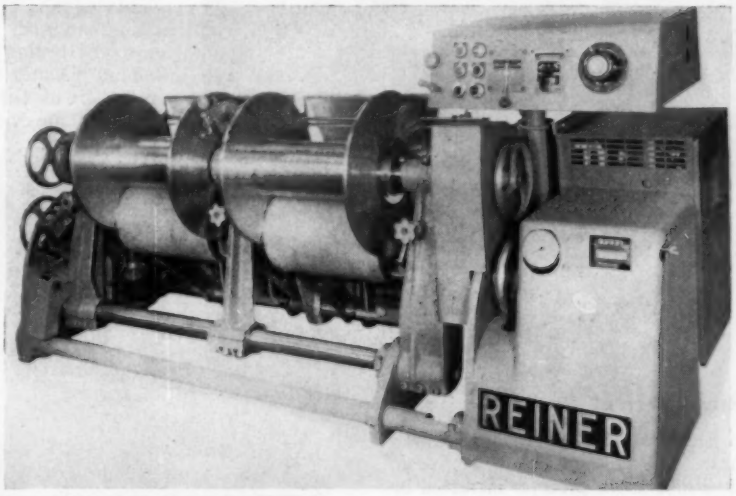
Sectional Warper

A heavy-duty sectional warper built by Robert Reiner, Inc., Weehawken, N. J., can run either 42-in. tricot beams with a flange diameter of 21 ins. or two 21x21-in. beams simultaneously. The machine uses no measuring roll, and this feature eliminates yarn strain and imperfections caused by measuring rolls.

The machine doffs automatically by a gear-reduced motor and slip clutch that pick up beams from the floor or from a beam-loading wagon or dolly. A simple up-and-down switch brings the beams into running position.

The control mechanism, which includes comb control, predetermined shut-off counter, speed indicator, yardage counter, and indicating lights, is grouped around a streamlined panel at the right side of the machine.

Broken ends can be repaired with the operator standing in an upright position. Warper beams can be made with a maximum flange diameter of 32 ins. Running speeds up to 450 yds. per min. are obtained through a rheostat. A tachometer generator maintains a constant yarn speed. The machine can be run slowly for short periods for inspection.



Circle T-1 on Reader-Service Card

Mechanical Loom Cleaner

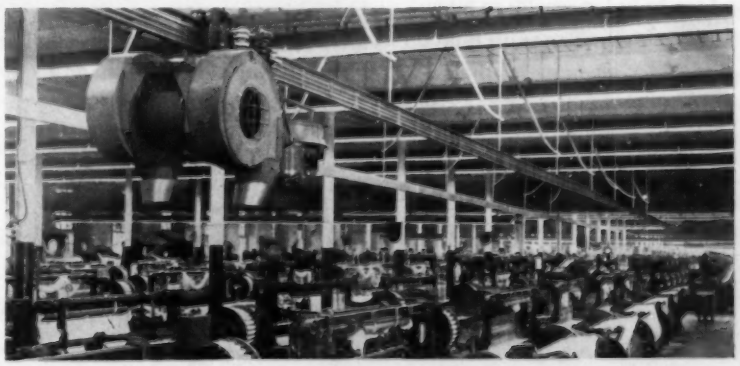
A loom cleaner that uses helically spinning jets of high-velocity air to give a series of lifts and shoves to lint, fly, and dirt has been introduced by American Moistening Co., Cleveland, N. C., and 260 W. Exchange St., Providence, R. I.

The cleaner, called Amco Helicone, uses rapidly whirling outlet nozzles, which are driven by the air stream to direct the air jets. Air is always driven at an acute angle in a series of overlapping circular patterns at the loom and cloth surfaces to produce a rapid series of bursts of cleaning action. The cleaner passes over the looms in a timed cycle.

The track for the cleaner is suspended from the ceiling and has no supporting posts or attachments to the frames of the looms. Consequently, there's a clear view throughout the weave room.

In addition to loom cleaning, ceiling cleaning is provided.

The cleaner operates on 55-v. three-phase power for safety to employees.



Circle T-2 on Reader-Service Card

Electronic Lap Tester

An electronic lap tester to measure both short- and long-term variation in picker laps has been developed by Thomason Textile Service, Inc., 2233 Greene St., Charlotte 8, N. C. The tester uses a Uster Varimeter as a measuring head.

The Thomason lap tester permits the Uster Varimeter to be used to test picker laps in a laboratory. It measures yard-by-yard variation and average weight per yard directly from the Varimeter dial. The exact correlation between the speed at which the lap is tested and the speed of the recorder lets you locate sources of irregularity, and lap waste can be handled easily.

The tester is of all-steel construction, and antifriction bearings are used. It has a ¼-hp. motor that permits exact control of testing speed and lap tension. The standard machine operates at 4 yds. per min. to coincide with a Uster chart of 4 ins. per min. Therefore any mechanical defects that are evident from tests can be accurately located on the picker.

The tester is mounted on ball-bearing casters and can be easily moved. The lap waste can be deposited into a truck to be returned to the opening room, or it can be hooked to the mill's vacuum waste-removal system.

Circle T-3 on Reader-Service Card

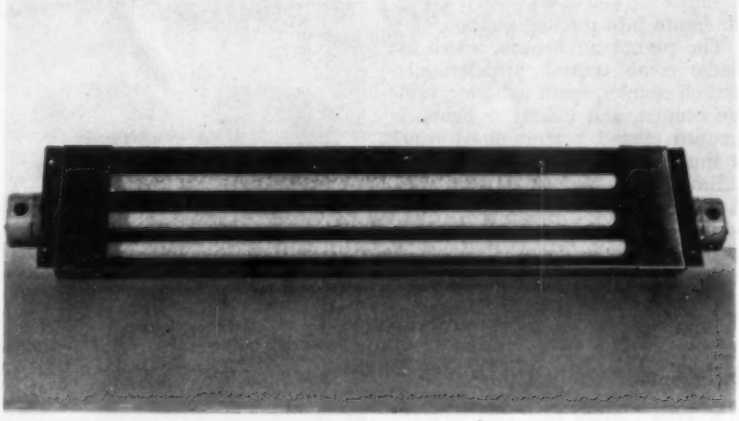
Radiant-Heat Dryer

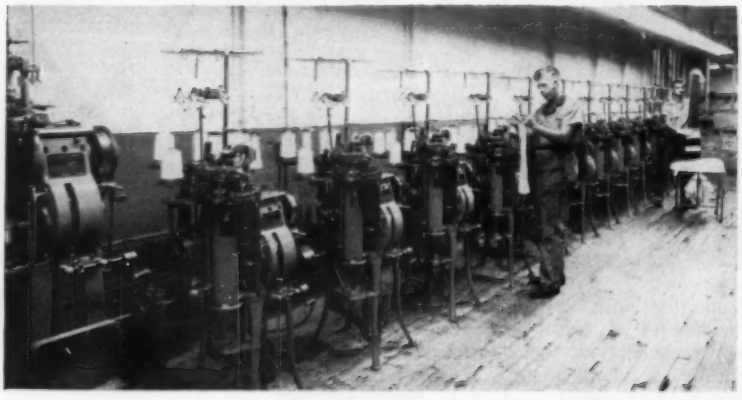
Electrical elements enclosed in a heat- and shock-resistant sheath are used in a textile predryer marketed by Velotron, Inc., 1186 Broadway, New York 1, N. Y.

The heating units are mounted in a polished reflector designed to take little space. No housings are necessary to obtain high efficiency from the units because they produce chiefly a wide band of radiant heat energy.

The units are designated as SMFR-3 and can be had in lengths to 60 ins.

Circle T-4 on Reader-Service Card





Seamless-Hose Machine

Carolina Model K2FS, built by Carolina Knitting Machine Corp., Charlotte, N. C., is a two-feed, high-cylinder, spiral-type machine capable of knitting mesh hosiery.

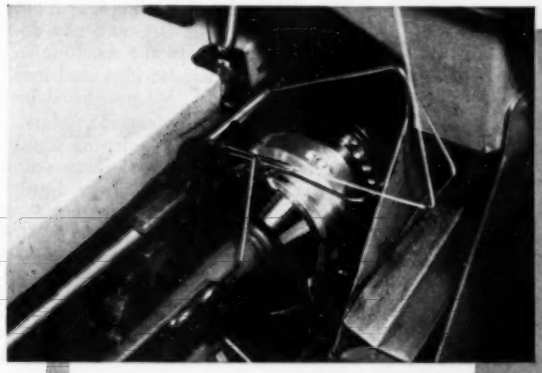
The machine knits plain or mesh fabrics with conventional or stretch yarns. The K2FS machine has demi-toe and Y-heel attachments and electric stop motions.

Circle T-5 on Reader-Service Card

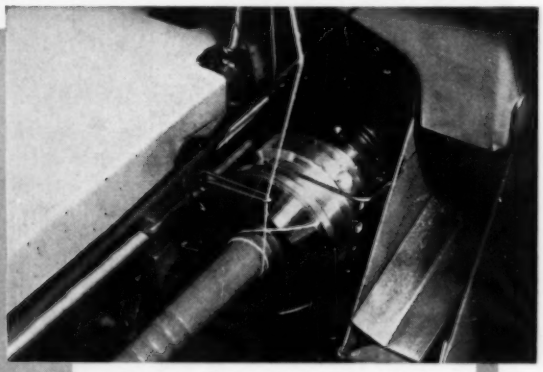
FOSTER-MUSCHAMP MODEL 66* AUTOMATIC FILLING WINDER

A New High in Winding Quality • A New Low in Winding Costs

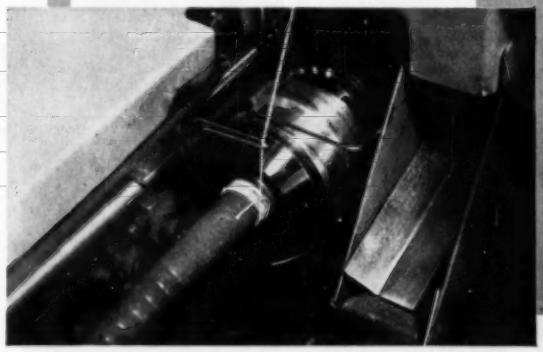
*Manufactured in Westfield, Mass.



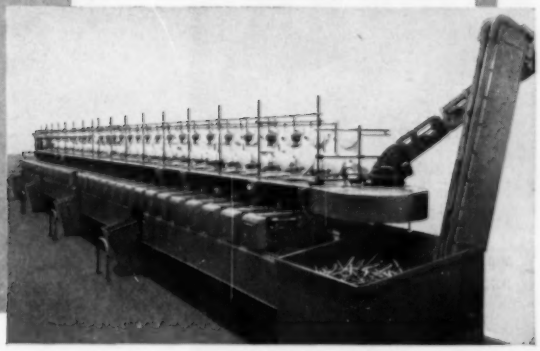
No. 1 — Bobbin entering drive



No. 2 — Commencing the wind



No. 3 — Tail released and secured under first wraps of bunch



No. 4 — Typical installation

NO STARTING TAIL — *A New Feature*

The Foster-Muschamp Model 66 completely eliminates the starting tail on bobbins (see illustrations). Therefore it eliminates the weaving troubles which are caused by starting tails.

This is only one of many features which have enabled the Model 66 not only to set a new high in winding quality, but also a new low in winding costs (as low as ¼¢ per lb. in some cases). Some of the other features are as follows:

- Uniformly perfect bobbins as to wind and density.
- A spindle speed of 15,000 r.p.m.
- Everything is automatic (including pinboarding or stacking of filling boxes and lint cleaning), except piecing up of broken ends and donning and doffing magazine cone creel.

Find out how the Model 66 can increase your quality and lower your costs. Send for our new Bulletin M-4A. No obligations.

FOSTER MACHINE COMPANY

Westfield, Mass., U. S. A. • *Southern Office* — Johnston Bldg., Charlotte, N. C.

Canadian Representative — Ross Whitehead & Co., Ltd., 1475 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ontario

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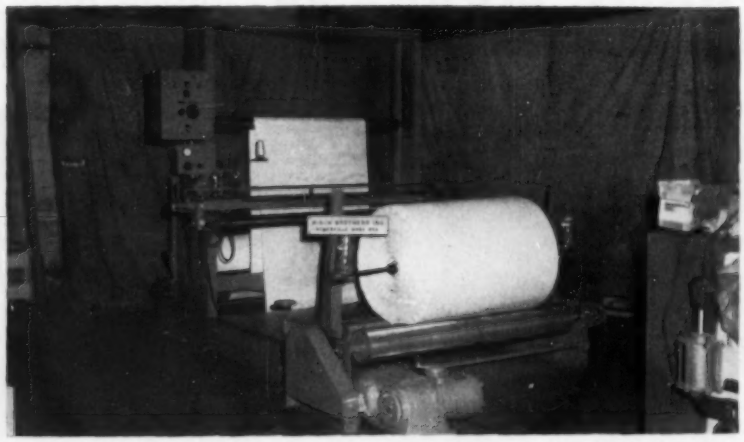


Inspecting and Winding Machine

A machine for inspecting gray-room seams in large rolls automatically detects seams and stops the machine so that the seams may be inspected and resewn if necessary. Manufactured by Birch Bros., Inc., Somerville, Mass., the machine includes a let-off stand with magnetic brakes, a railway sewing machine with a Merrow head, guiders, and rewinding equipment.

The machine will run at 130 to 260 yds. per min., and the seams are stopped in proper position to be resewn by the operator.

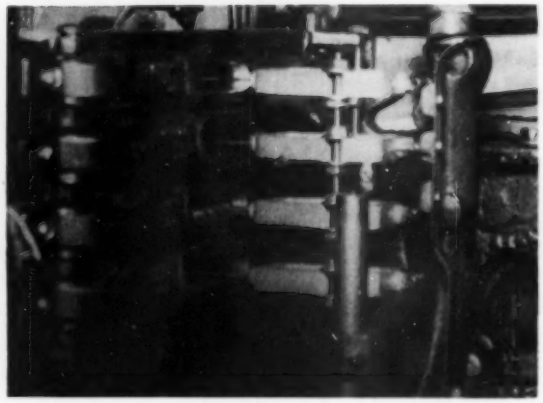
Circle T-6 on Reader-Service Card

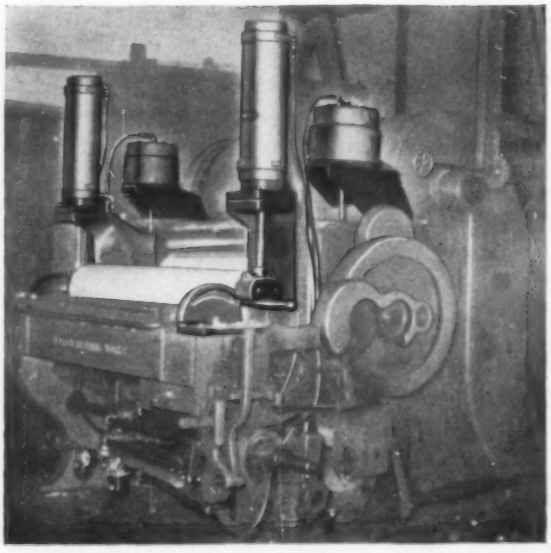
Electric Feeler for Loom

An automatic electric feeler for four-by-four-shuttle looms is being sold by Maaljo Textiles, Inc., 1-3 McBride Ave., Paterson 1, N. J.

The feeler can be used on any loom with an electric warp stop motion. No extra electrical winding is necessary, and installation is simple.

Circle T-7 on Reader-Service Card





Pneumatic Lap Control

The Long pneumatic lap-control system, shown here on a picker, can now be applied to sliver- and ribbon-lap machines, according to Livingston & Haven, Inc., Charleston, S. C. Laps weighing up to 38 lbs. are produced with a minimum of waste.

The system applies constant air pressure to the lap core. The air pressure, which is adjustable to fiber size, keeps tension even and permits a smooth let-off.

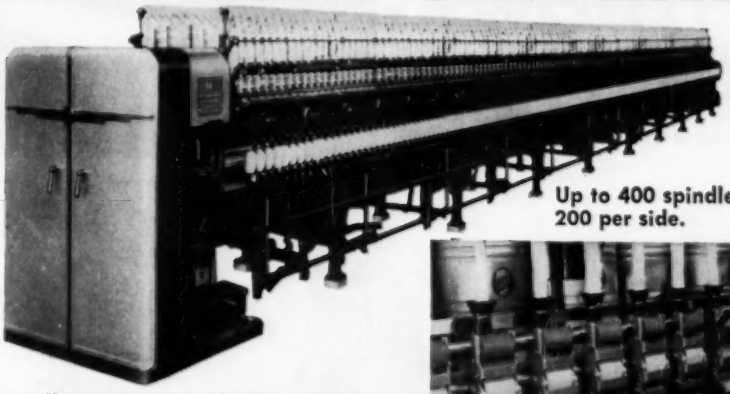
Circle T-8 on Reader-Service Card

New Revolutionary

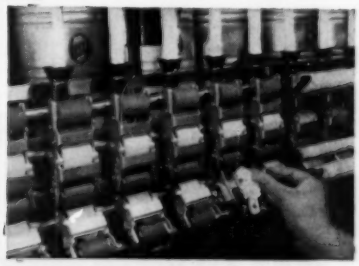
OM-S SUPER HIGH DRAFT SYSTEM

SPINS 12's to 120's DIRECTLY FROM SLIVER!

Completely Eliminates Roving!



Up to 400 spindles, 200 per side.



View of drafting roll cradles on OM-S frame. Note easily removable *self-weighted* cradles.

An installation of OM-S super draft system. Note *height* of sliver guide roll: only 5 feet from floor!

1. The OM-S produces superior quality yarns — 5% to 10% stronger than conventionally spun yarns.
2. The OM-S handles cottons and synthetics up to 3" in staple length.
3. The OM-S drafts up to 700 directly from drawing sliver.
4. The OM-S complete system costs less than a conventional frame alone.
5. The OM-S is installed and serviced in North America by reputable erectors.
6. The OM-S is precision engineered and ruggedly built by one of the largest textile machinery manufacturers in the world.
7. The OM-S is currently in use throughout the world, including the United States, to the extent of over 600,000 spindles. Over 5 million spindles of O-M (all models) have been produced.
8. The OM-S system includes an automatic can filling, sliver cutting and can doffing mechanism for drawing frames.
9. The OM-S incorporates numerous advanced features and is now available for large-package spinning.

With no other spinning system can you duplicate the better quality, lower operating cost and savings in floor space and investment offered by the OM-S.

Investigate *now!*

Send for additional literature on the OM-S. Ask us to run a demonstration or test. Request a quotation on an initial installation.

Address all inquiries to Edward S. Rudnick.

Exclusive U.S. and Canadian Sales Representative

Edward S. Rudnick

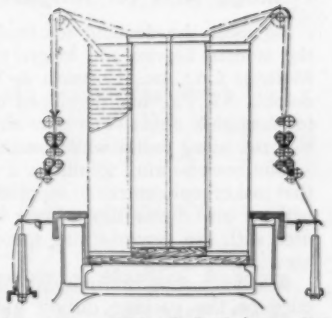
OLYMPIA BLDG., NEW BEDFORD, MASS.

Daiichi Bussan Kaisha, Ltd.

Exporter TOKYO · NEW YORK *Importer*

O-M Spinning Machine Manufacturing Co., Ltd.

OSAKA, JAPAN



Cross-section sketch of OM-S frame. Note arrangement of rollers and sliver cans, 2-sided frame.

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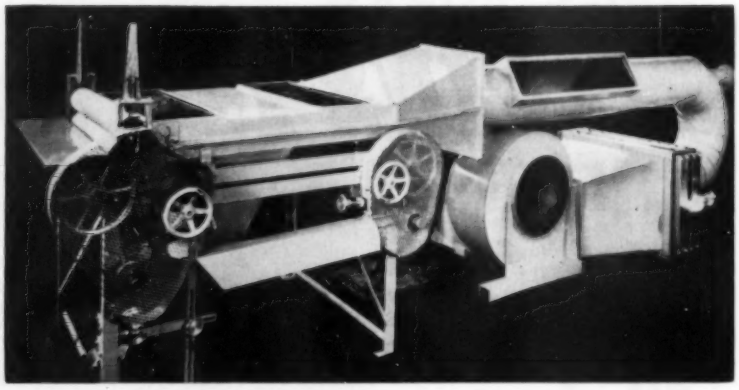
Knitted-Fabric Dryer

A dryer for tubular knitted fabrics has been developed by Joseph Pernick Co., Inc., 5419-23 Flushing Ave., Maspeth, N. Y.

The dryer is mounted horizontally and handles tubular knitted goods direct from the extractor. Hot air, provided by a self-contained unit, is forced over and through the fabric as it passes over spreaders that control the dried width.

Drying speeds up to 15 yds. per min. are possible. The fabric may be delivered either in a roll or folded flat.



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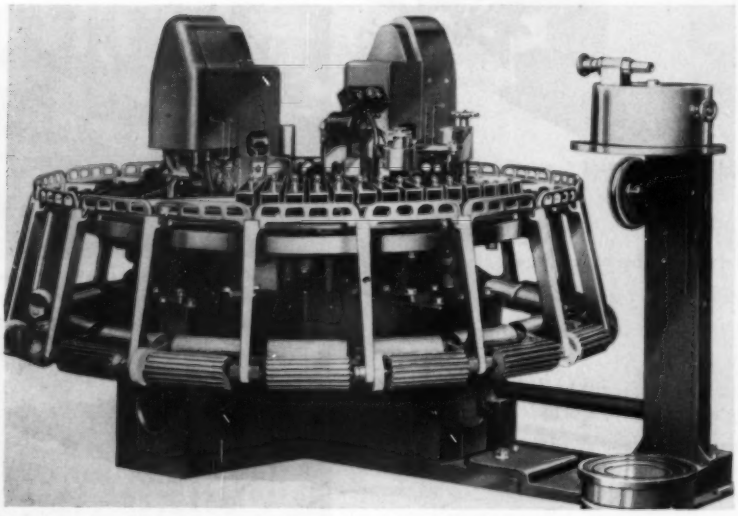


Noble Comb

The TW Mark-V Noble comb, built by Taylor, Wordsworth & Co. Ltd., Leeds, England, is built on a heavy base plate with a 4-hp. motor fitted directly to the base plate.

A V-rope drive is taken from the motor to a cross shaft carried in roller bearings on the base plate. Pulleys at each end of this shaft drive the dabbing motions. The two dabbing motions are mounted on box-section stands that also enclose the driving belt.

The dabber eccentric shafts are carried on roller bearings, and the working parts of the dabbers are lubricated by a pump. Control panels are provided at both sides of the machine to give stop, start, and creep control.

The revolving funnel is driven by a separate motor. An electric stop motion guards against broken sliver.

The circles can be changed quickly and easily by two special arms that are fitted in sockets on the box-section casting. The dabber is supported on the arms while the circle is removed. The large circle can also be changed this way, and one man can do the job.

The coiler is driven by a shaft at the floor level. The upright shaft of the coiler is carried on ball bearings, and the twist wheel and the can-plate wheel at the bottom of the coiler are carried on ball races to take the thrust caused by full sliver cans.

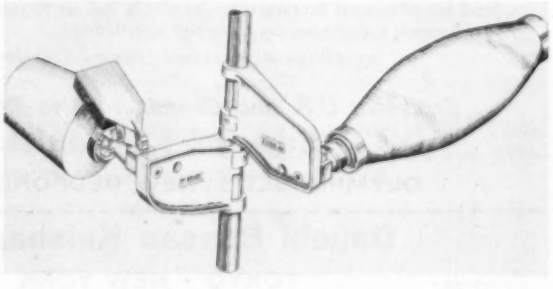
Circle T-10 on Reader-Service Card

Package Arm for Magazine Creel

To meet the demand for equipment to accommodate the modern heavier and longer yarn packages, Edward J. McBride Co., Inc., Cottman & Wissinoming Sts., Philadelphia 35, Pa., has developed a swinging package arm for magazine creels. The new arm has an adjustment to vary the swing radius while retaining the positioning lock.

The bowed-spring spindle is a separate detachable unit that makes replacement or repositioning a simple operation without any dismantling. Cone holders and adapters are used with the bowed-spring spindle to handle most packages.

A self-adjusting antisnagging pad that follows the back edge of the package during unwinding is optional. A thick polyurethane pad follows the contour of the package and keeps the yarn from falling off the back of the cone.



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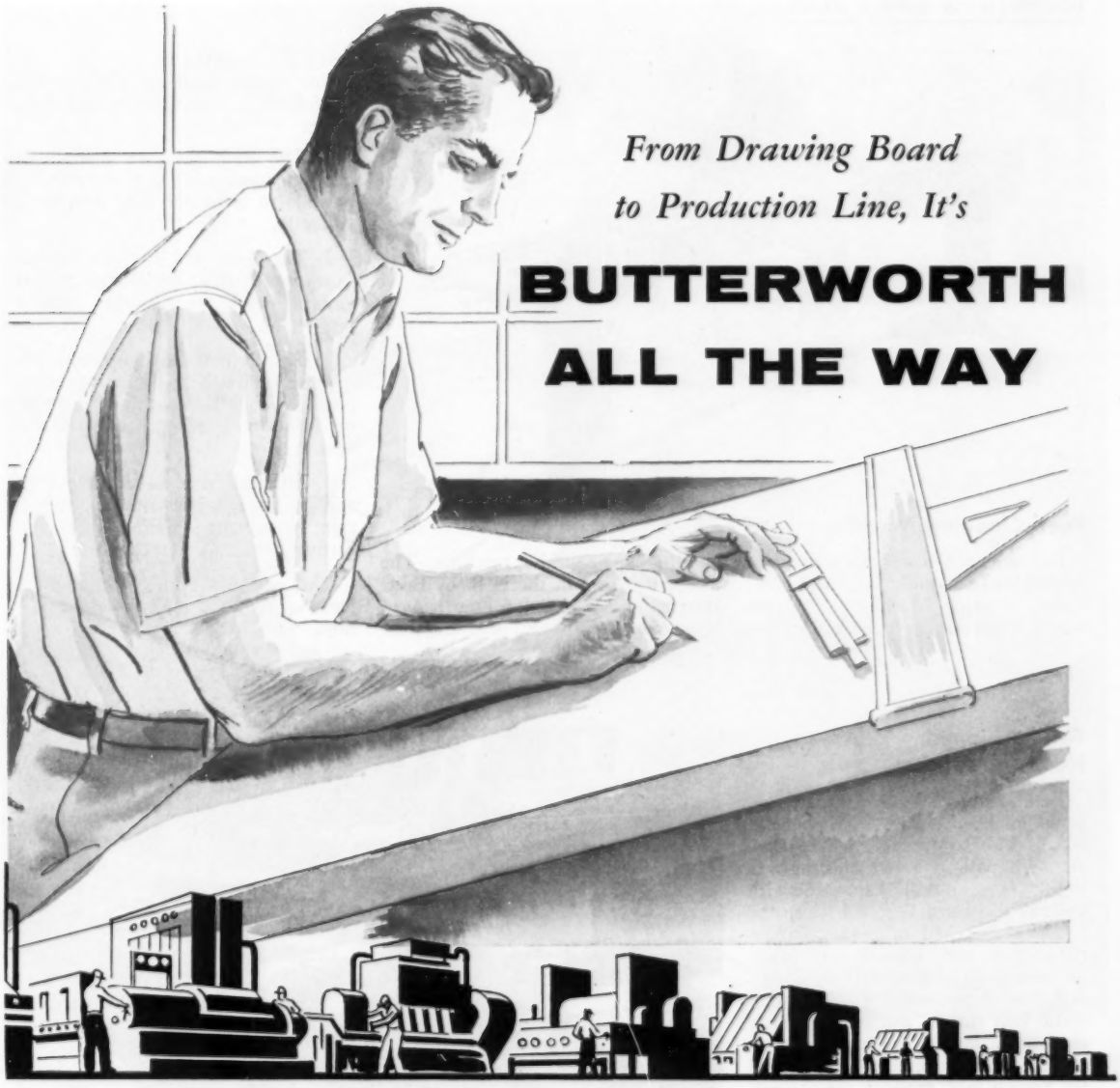

From Drawing Board
to Production Line, It's

BUTTERWORTH
ALL THE WAY

At Butterworth, you get engineering skill *plus* manufacturing facilities — all in one plant, with a single source of responsibility. Butterworth Development Engineering goes to work for you — in our plant with our men and our equipment — to transform your ideas into realities . . . gives you the process, the product or the machine you need — not just the blueprints.

At Butterworth, your idea remains *your* idea, but our engineers become your engineers. Each step in the development of that idea is carefully guarded. And Butterworth men and machines manufacture the finished product to your complete satisfaction.

Got a gap that needs bridging, between an idea and a reality? Then write or call Butterworth today.

BUTTERWORTH
Serving the Textile Industry Since 1820

Development Engineering • Research • Machine Building

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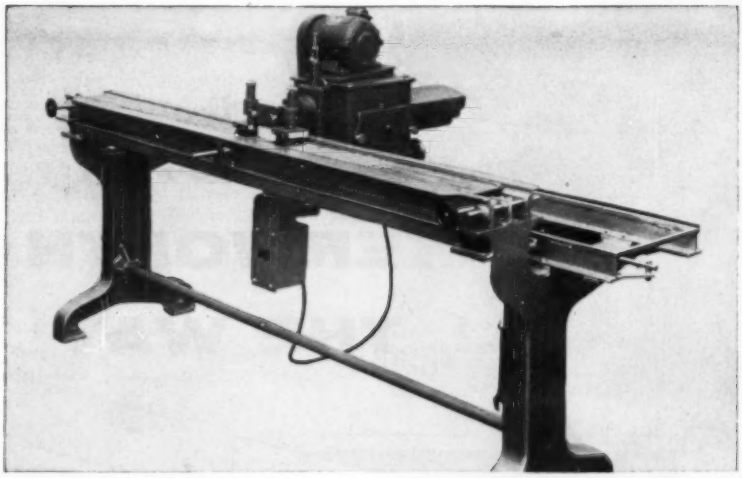


Reed-Cleaning Machine

Improvements have been announced by Affutex Hagerup & Lindqvist Eftf., Georg Larsen Machinery, Copenhagen, Denmark, on its Excelsior reed-grinding and polishing machine. The machine is sold in the U.S. by Edda International Corp., 468 Fourth Ave., New York 16, N. Y., and Calhoun Towers, Greenville, S. C.

For better machine performance, the following improvements have been made:

1. The stand or reed holder has been changed so that it is now impossible to block the stop nuts inadvertently.

2. The stone- and brush-holder arm is equipped with special springs that absorb shock during the turning movement.

3. The holder also has a new lifting mechanism that begins operation precisely when the machine starts rolling from one grinding position to the next.

4. All axles have oil packing rings, and the brush-holder arm has a rubber case to prevent grinding dust from getting inside the machine.

The machine grinds and polishes reeds up to 2,700 mms. long and 180 mms. wide.

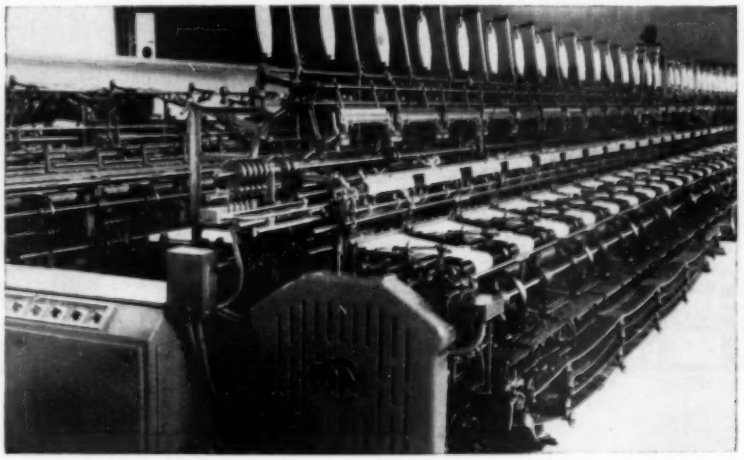
Circle T-12 on Reader-Service Card

Full-Fashioned Hosiery Machine

Full-fashioned knitting machines, made by Daniels Cotton-Maschinenfabrik GmbH, Wiesbaden, Germany, are built with 6 to 40 knitting sections. Gauges up to 75 are made with knitting widths of 14½ to 15 ins.

There are eight or nine yarn carriers; and the normal equipment includes changeable carrier tubes, pyramid heel, bow-shaped splicing, automatic welt turner, and separate draw mechanism for the slur cam and yarn carrier. Special equipment is supplied for French feet, marking attachment, nonrun, and plating.

The machine speed is up to 100 courses per minute. The machine is driven by a commutator motor or electronic switch panel linked with a four-track roller chain over the safety clutch to the handwheel shaft through three gears to the camshaft.



Four narrowing spindles with separate backward and forward movement have combined safety pawls. Changeable friction in the center offers production of stretch stockings on the two-carrier system, ringless stockings on the three-carrier system, and stretch nonrun stockings.

Circle T-13 on Reader-Service Card

Oil-Resistant Tape

Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia 34, Pa., has announced that its Supr-O-Tape is now available with Hy-Car coating that resists damage from oil or emulsions.

Other characteristics are similar to the regular neoprene-coated tape.

Circle T-14 on Reader-Service Card

High-Speed Argyle Knitter

The SCOP-X, built by Hemphill Co., Pawtucket, R. I., knits overplaid argyles 33% faster than the original SCOP.

A larger driving pulley has been added to increase the speed of the machine. Cams have been modified to take care of the increased speed so that seconds and faulty work are kept low.

Circle T-15 on Reader-Service Card

THIS IS NO YARN

Clearness alone is no guarantee that a textile lubricant is good. True, it is a vital factor in order to prevent dangerous staining. But equally important is the amount of friction that the lubricant permits, for not only does excess friction lead to eventual machinery breakdown, it also boosts power consumption.

Studies show that 10% of the average mill's selling price is due to power costs . . . so it's obvious that the lubricant that lowers power consumption increases profits.

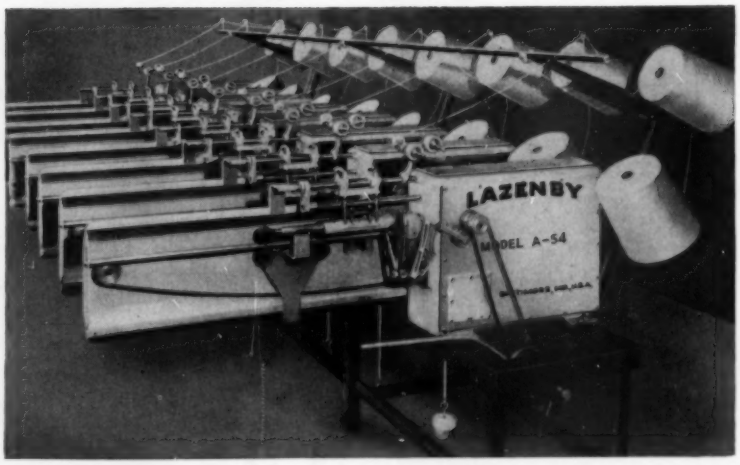
Each of the seventeen specially tailored Cities Service Glade Oils does just that! By minimizing friction and reducing power loads, they can actually add as much as 2½% to your profits. Moreover, there are absolutely no clearer textile oils available anywhere! For more information, write Cities Service Oil Company, Sixty Wall Tower, New York 5, N. Y.

CITIES SERVICE

QUALITY PETROLEUM PRODUCTS

For more data, write this page number on Reader-Service card. →

Automatic Cop Winder



Built by F. A. Lazenby Co., 3106 Elm Ave., Baltimore, Md., the A-54 automatic cop winder winds 98 lbs. per spindle of 14-lb. jute per 8-hr. shift. The cops are $1\frac{3}{8}$ ins. in diameter, and the spindle speed is 2,200 rpm.

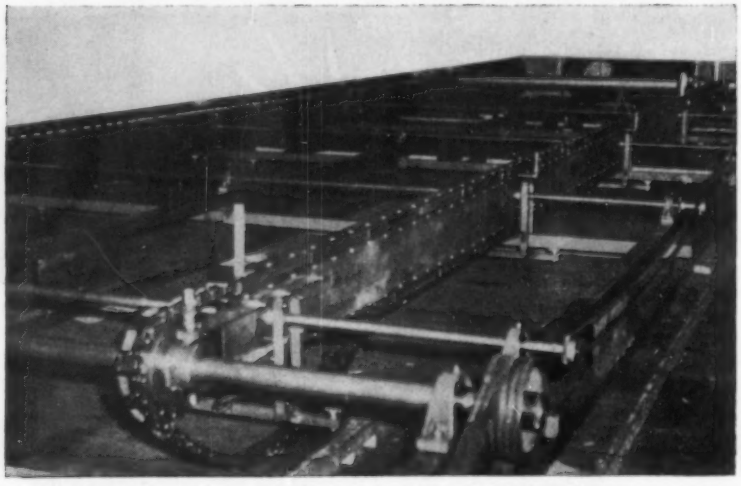
The winding spindle does not stop or slow down for doffing. The new cop is being formed while the completed cop is being doffed. The end is cut and the tail stock returned to its original position.

Adjustment for the diameter of the cop is made by locating an adjusting screw in the arc of the aluminum traverse arm. The cop length is adjusted by turning a dial knob on a graduated scale.

A spindle change is made in a few minutes when different yarns are run. An entire change-over of the spindle, trumpet, cop length, and cop diameter takes 5 mins. Worms and gears are alloy steel and Meehanite castings. All cams, gears, pinions, traverse mechanism, and spindle bearings run in a continuous oil flow in an oil-tight housing.

The winder is used in cotton mills, carpet and rug mills, and mills weaving tapestry and upholstery fabrics. Winding wire-core asbestos yarn at a spindle speed of 1,230 rpm., the production is 200 lbs. per 8 hrs.

Circle T-16 on Reader-Service Card



Circle T-17 on Reader-Service Card

Carpet Tenter

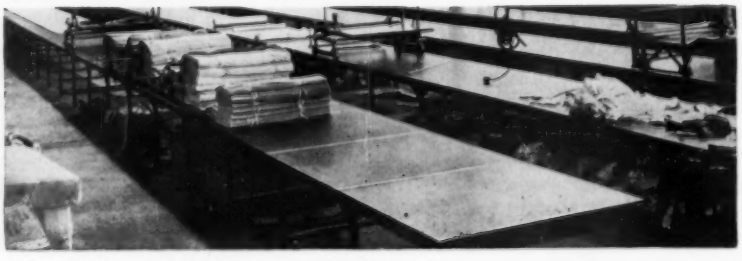
A tenter frame especially designed for drying carpeting has been developed by Southern Textile Works, 202 S. Towers St., Anderson, S. C. The machines are adjustable to take carpeting 9 ft. wide to 16 ft. wide.

Control of all phases of the operation of the tenter is through a master control panel.

Cutting Table

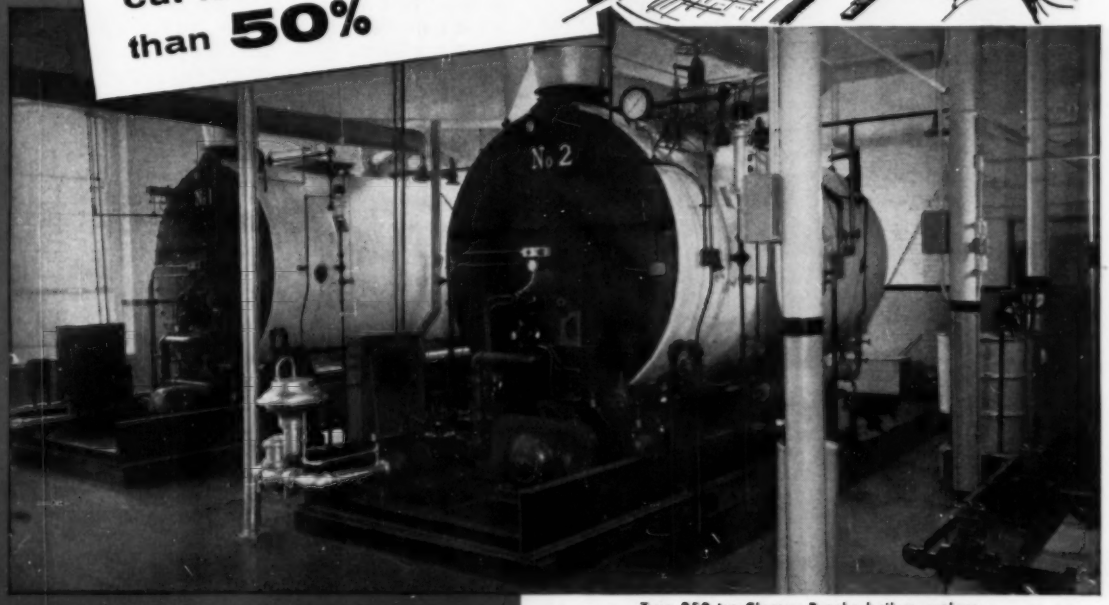
Cutting tables of rigid construction and with smooth, splinter-free tops are available from Textile Trimming & Boarding Machine Co., 450 N. Front St., Reading, Pa.

Standard units are available in four-foot sections in any width from 36 ins. in 6-in. increments.



Circle T-18 on Reader-Service Card

Newberry Mills survey showed plant engineers how to cut fuel costs more than 50%



Two 250-hp Cleaver-Brooks boilers replace four obsolete units. "Most attractive boiler room in the South," says Newberry Mills.

Two new Cleaver-Brooks boilers SAVE $23,445 the first year

G. B. Sessions, superintendent of Newberry Mills, says, "Eighteen months ago we installed two new Cleaver-Brooks boilers at Newberry Mills, Newberry, S.C., that are paying for themselves at a fast clip. At the present rate of savings, the boilers will be paid for in less than two years of operation. Fuel costs have been cut more than 50%."

When Newberry Mills engaged consulting engineers to analyze their heat and power load, they learned the startling facts of boiler obsolescence. They learned how they could cut operating costs with efficient boiler equipment. Their experience proves how the new boilers provided fuel and labor savings, a clean boiler room, free of soot, and reduced maintenance costs.

The savings on fuel for the first year of operation were an impressive $14,045.41. Maintenance savings amounted to $9,399.59. Periodic checks showed boilers performed at a fuel-to-steam efficiency of 82.88% on No. 6 oil.

Efficient Cleaver-Brooks four-pass construction with forced draft give you more for your fuel dollar. Four pass design maintains high gas velocity for effective scrubbing action. Forced draft design keeps fans running cool and trouble-free.

Send us your name to receive regular issues of new "Cleaver-Brooks Bulletin" — the boiler newspaper!

PERIODIC SURVEYS PAY. Find out how you can save with Cleaver-Brooks boilers. Get in touch with your local Cleaver-Brooks representative, or write: Cleaver-Brooks Company, Dept. L, 361 E. Keefe Ave., Milwaukee 12, Wis. Cable address: CLEBRO — Milwaukee — all codes.

Cleaver-Brooks®

TWENTY-FIVE YEARS OF LEADERSHIP
BY THE ORIGINATORS OF THE SELF-CONTAINED BOILER

For more data, write this page number on Reader-Service card. →

Printing-Screen Carriages

A carriage that permits one operator to move the printing screen from station to station without help has been produced by Friedrich Grohmann, Munich, Germany.

The units can be supplied in standard sizes and require only the addition of a guide rail to be used on regular printing tables.

One man can easily handle the carriage and screen when it is necessary to move from one printing table to another.

Circle T-19 on Reader-Service Card

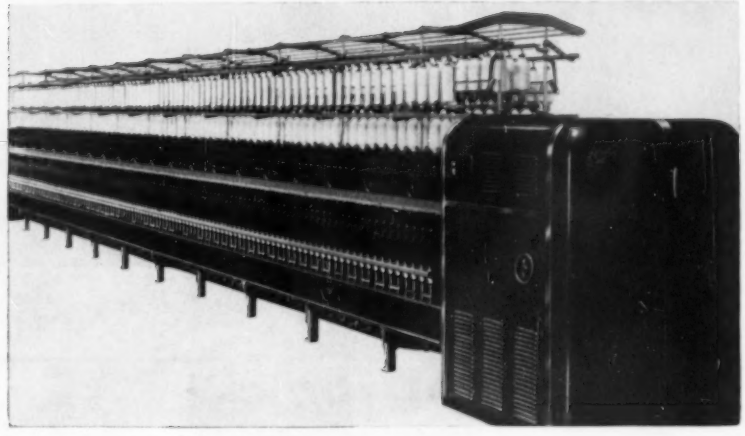
Spinning Frame

The MR3 spinning frame, an improved version of the M1, has been announced by Platt Bros. (Sales) Ltd., Oldham, England.

The MR3 frame is an all-number, general-purpose machine that provides flexibility and ease of operation with a minimum of cleaning.

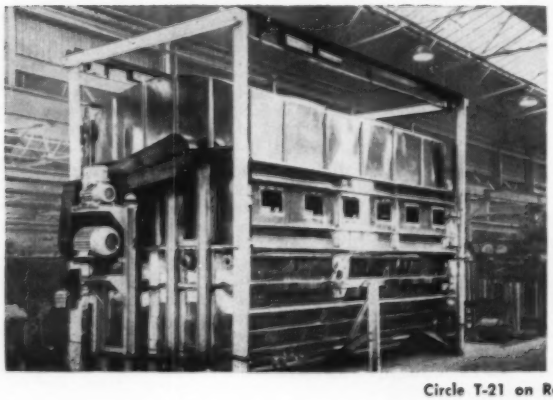
Drafting rolls have an inclination of 45°; roll delivery angle at top of the lift is 35°; roll delivery angle at bottom of the lift is 19° for the 6- to 10-in. lift and 17° for the 10- to 12-in. lift. If desired, a 35° inclination of the drafting rolls is available. Any one of several different drafting systems can be specified.

The MR3 keeps yarn tension lower, reduces ends down, and permits increased spindle and traveler speeds. Balloon-control rings can be added if extra high speeds are desired.



The frame is designed for easy cleaning. Spindle rails, gearing, and many parts under the roller beam are enclosed. Pneumafil is optional. Several kinds of creels, arranged to accommodate traveling cleaners, are available.

Circle T-20 on Reader-Service Card



Carpet-Dyeing Machine

What is said to be the largest carpet-dyeing machine in the United Kingdom has been installed in the dyehouse of Tufted Carpets Ltd., Brighouse, Yorkshire, England.

The stainless-steel machine is 20 ft. long, 12 ft. deep, and 12 ft. high, holds 5,000 gals. of water, and can handle carpets up to 18 ft. wide. It was manufactured by Samuel Pegg & Sons Ltd. at its Barkby Rd., Leicester, works.

Circle T-21 on Reader-Service Card

There's more in this barrel for you...

James E. Pratt, left, Socony Mobil engineer, obtains performance data on hydraulic system at an aluminum extrusion plant.

MORE ENGINEERS

to help you improve production and cut costs!

Specify Socony Mobil and get the services of more industrial lubrication engineers than are provided by any other oil company.

These specialists, working closely with your Mobil representative, will help you set up a plant-wide program of correct lubrication . . . advise on any lubrication problems that might arise. Their long experience and expert recommendations can improve your production and cut costs.

Socony Mobil products are also backed by *more* services for analyzing petroleum products in use . . . *more* on-the-job training of your personnel in correct product application . . . *more* approvals from machine builders . . . *more* continuous research to assure continually improved products . . . *more* practical experience—90 years!

Always specify Socony Mobil. There's *more* in every barrel for you!

SPECIFY
SOCONY MOBIL

FIRST STEP
IN CUTTING COSTS

SOCONY MOBIL OIL CO., INC., and Affiliates: MAGNOLIA PETROLEUM COMPANY
GENERAL PETROLEUM CORPORATION

LUBRICANTS • FUELS • CUTTING FLUIDS • WAXES • SOLVENTS • PLASTICIZERS • PETROCHEMICALS

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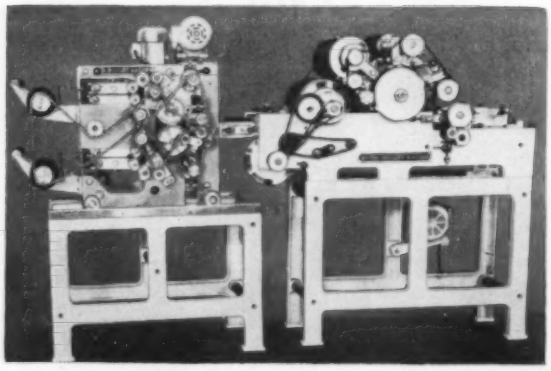


Sample Card

A sample card with tape condenser has been announced by Anton Guillot K.G., Aachen, Germany. The card, equipped with either fillet or metallic clothing, permits wide settings for synthetics.

The tape condenser has two motors and a special drive for the rub aprons that permit speeds of 250 to 500 rpm. Rub aprons are made of rubber, and the tape condenser has either 2x7 ends with 18-mm. tapes or 2x10 ends with 13-mm. tapes.

American sales representative is Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.

Circle T-22 on Reader-Service Card

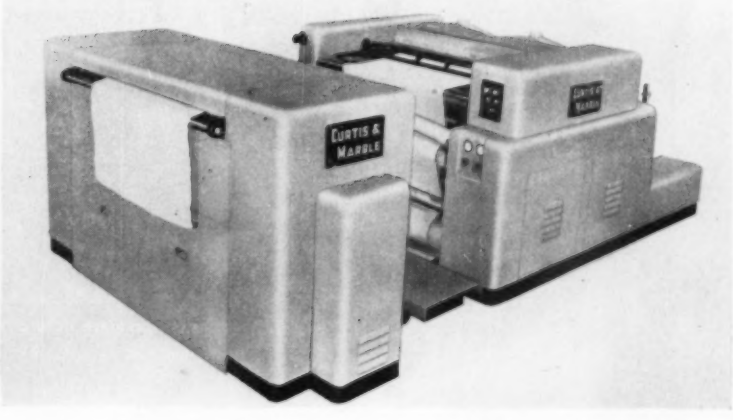
Shearing-Brushing Range

A cloth-finishing range for cotton, synthetic, and blended-fiber fabrics has been announced by Curtis & Marble Machine Co., 72 Cambridge St., Worcester 3, Mass.

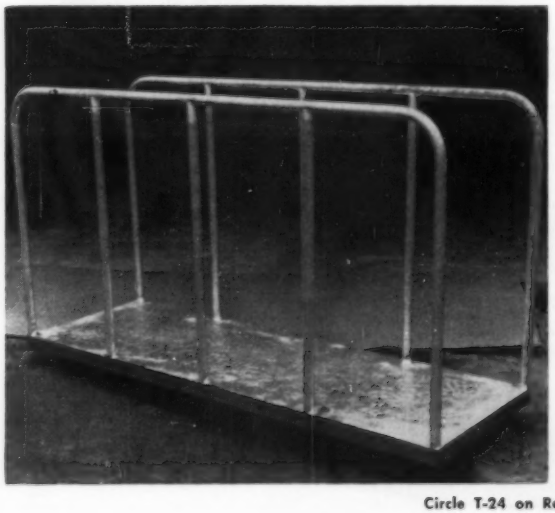
The shearing machine features enclosed mechanism with access through removable panels, individually driven shear blades, and automatic seam protectors.

The brushing unit may be equipped with up to eight interchangeable cylinders carrying an assortment of surfaces for a wide variety of brushing requirements.

Rest adjustments are quickly changed to provide light or heavy brushing.



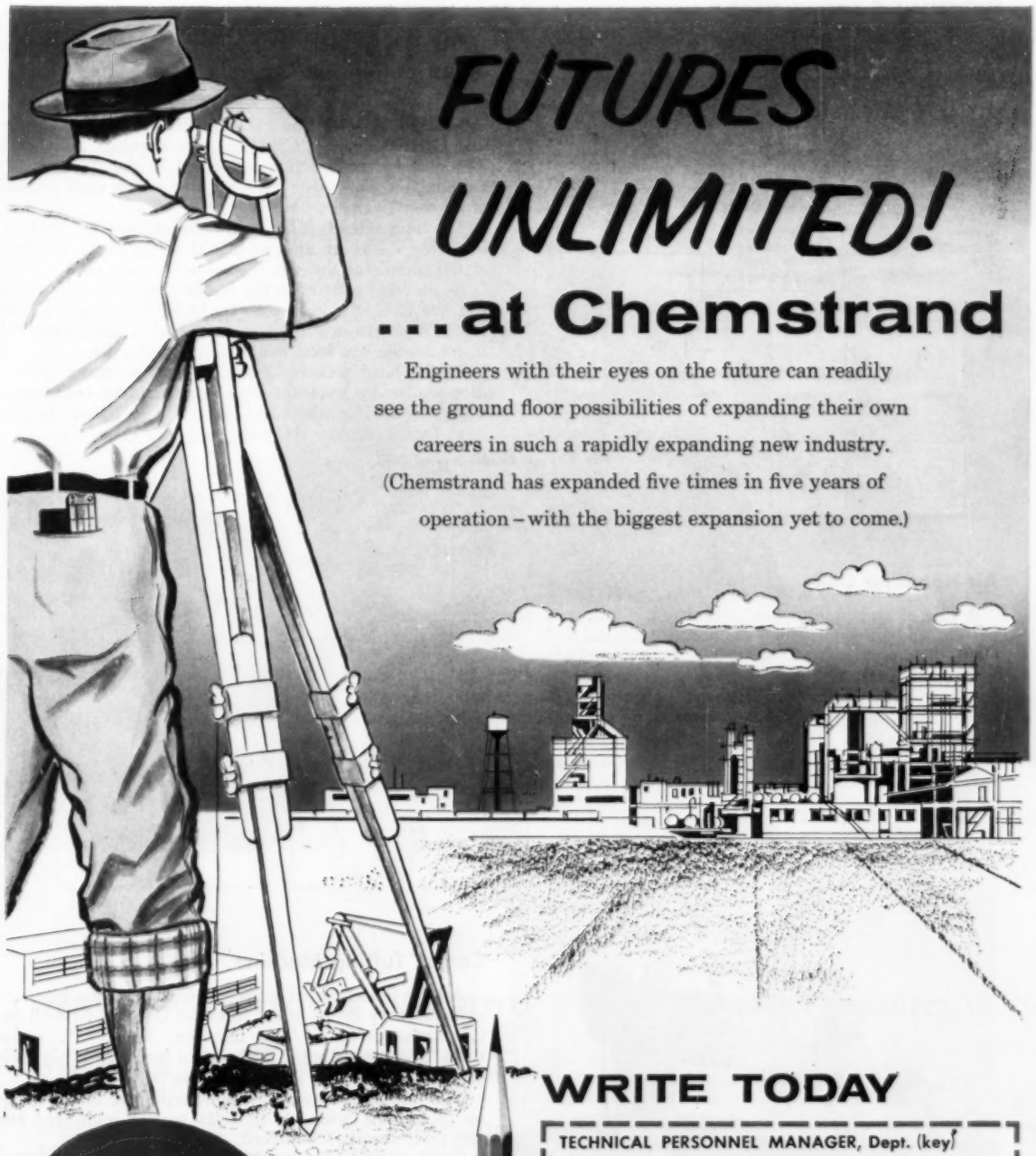
Circle T-23 on Reader-Service Card



Cloth Truck

A truck for doffing or storing rolls of cloth is being manufactured by Bennett Rose Co., P. O. Box 8, Roebuck, S. C. The truck is all-steel construction. It is 72 ins. long, 24 ins. wide, and 37 ins. high. The side supports are steel pipe welded to a smooth platform so that cloth cannot be damaged. The rugged construction permits the truck to handle heavy loads.

Circle T-24 on Reader-Service Card



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Engineers with their eyes on the future can readily see the ground floor possibilities of expanding their own careers in such a rapidly expanding new industry. (Chemstrand has expanded five times in five years of operation – with the biggest expansion yet to come.)

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TECHNICAL PERSONNEL MANAGER, Dept. (key)
The Chemstrand Corporation
Decatur, Alabama

Gentlemen:
It is my understanding that you need for immediate employment graduate engineers in various fields, particularly chemical, mechanical, industrial, textile and instrument engineering.
I am a graduate _____ engineer.
Please send me information concerning the ground floor opportunities at Chemstrand.

Name _____
Street _____
City _____ Zone ____ State ____

TOMORROW'S BIG DECISIONS WILL BE MADE **by the men who act today...**

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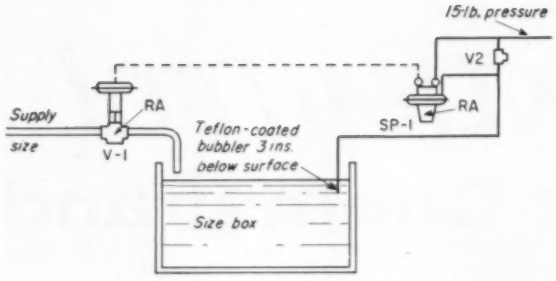


Improved Slasher Control

An improved size-level control for slashers has been announced by The Powers Regulator Co., 1002 Arnold St., Greensboro, N. C. The improvements are (1) a Teflon-coated bulb fitting immerged in the size and (2) a modulating valve that feeds the size as it is used, instead of an on-off valve.

The bulb extends 3 ins. below the size surface. Restricting valve V-2 is adjusted so that there's a slight bubbling at the surface of the size.

As the head pressure at the bubbler increases at a rise in the size level, the back pressure to SP-1 increases. Then RA SP-1 decreases control pressure to V-1 and closes V-1 to return the size level to the desired set point.

As the head pressure at the bubbler decreases from a drop in the size level, the back pressure to SP-1 decreases. Then RA SP-1 increases and opens V-1 to return the size level to the desired set point.

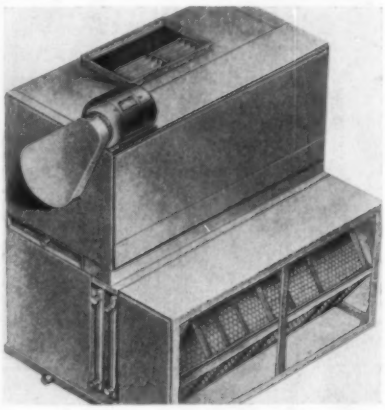
Circle T-25 on Reader-Service Card

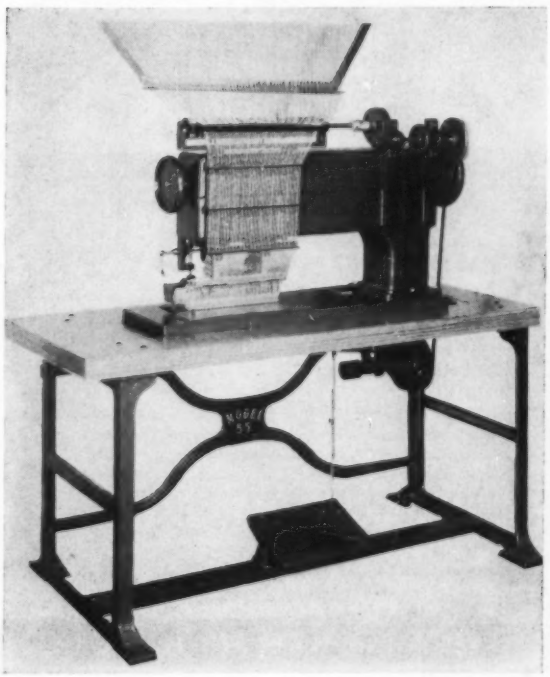
Air-Handling Units

A line of air-handling combination units for applications of ventilating, heating, and air conditioning has been announced by Westinghouse Electric Corp., Sturtevant Div., Hyde Park, Boston 36, Mass.

The units are available in 13 basic sizes capable of handling 500 to 48,500 cu. ft. per min. All units are designed for minimum space requirements, and components are easily accessible. Inspection, lubrication, and filter changing are easy jobs.

Circle T-26 on Reader-Service Card





Carpet Tufting Machine

A table-model carpet yardage tufting machine has been announced by Broad Street Machine Co., 2614 Broad St., Chattanooga, Tenn. The machine, Model 55, makes throw rugs or yardage in both cut or loop pile. It is easily changed from cut to loop or loop to cut.

The machine is available in 60-needle size in any gauge up to 11¼ ins. wide. It provides positive yarn feed and also positive-roller cloth feed.

Quick stitch adjustments are made by variable-speed pulleys, and quick nap-height adjustments up to ⅛ in. are made without moving or adjusting the knives or loopers. If greater nap-height adjustments are needed, the knives or loopers are reset.

The machine operates at 1,200 rpm. and is driven by a 1½-hp. motor.

Circle T-27 on Reader-Service Card

CONTINUED ON PAGE 198

Many washings old and still wrinkle resistant thanks to RHONITE R-1

Washdays have come and gone, yet this dress sheds wrinkles as easily as ever. But that's how cottons behave when treated with RHONITE R-1 finishes. RHONITE R-1, a modified urea formaldehyde resin, is a monomeric product of such small molecular size that it penetrates and reacts inside the fibers. That's why this dress still needs only a touch of the iron to look its best.

RHONITE *is a trade-mark, Reg. U.S. Pat. Off. and in principal foreign countries.*

Chemicals for Industry

ROHM & HAAS COMPANY

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Representatives in principal foreign countries

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NEW DYES and CHEMICALS

Cationic Softener

Uversoft D . . . produces a full, soft hand on cellulosic or protein materials. It can be used as a satisfactory antistatic agent where the softening effect is acceptable. The product is substantive and can be included in final rinse baths. Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6, Ohio.

Circle D-1 on Reader-Service Card

Vat Dye

Sandothrene Red Brown N2RF . . . yields shades fast to kier boiling and bleaching. Sandoz Chemical Works, 61-63 Van Dam St., New York 13, N. Y.

Circle D-2 on Reader-Service Card

Silicone Defoamer

Antifoam B . . . dispersible in aqueous solutions, is effective in concentrations of 3 to 30 parts per million. Extremely small particle size helps maintain good suspensions that do not separate readily under most working conditions. Dow Corning Corp., Midland, Mich.

Circle D-3 on Reader-Service Card

Acrylic Thickener

Acrysol ASE-75 . . . a high-solids acrylic thickener is offered in 40% solutions for dilution at point of use. Solutions as shipped are not viscous but dilute to form viscous low-solids solutions recommended as a thickener for adhesives, fabric backings, and many other purposes. Rohm & Haas Co., Washington Sq., Philadelphia 5, Pa.

Circle D-4 on Reader-Service Card

Vat Dye

Ponsol Gray N . . . produces bluish-gray to black shades on cellulosic fibers. Recommended for piece-goods dyeing, the color exhibits good fastness to light, washing, and chlorine. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Circle D-5 on Reader-Service Card

Naphthol Dye

Naphthol AS-LG . . . produces shades from bright yellow to cordovan on cotton that are fast to chlorine and peroxide. It is recommended for package dyeing of all types. Blackman-Uhler Co., Spartanburg, S. C.

Circle D-6 on Reader-Service Card

Acid Dyes

Basolan Fast Yellow GCL . . . possesses excellent fastness to light, brightness of shade, and good all-around fastness to other factors. It is recommended for wool and nylon. Other dyes in the Basolan series include **Basolan Fast Yellow GRL, Basolan Fast Orange GL, Basolan Fast Orange RRL,** and **Basolan Fast Red GL.** Nova Chemical Corp., 153 Waverly Place, New York 14, N. Y.

Circle D-7 on Reader-Service Card

Polyester Dyes

A series of dyes for coloring polyester fibers has been introduced by Eastman Chemical Products, Inc., subsidiary of Eastman Kodak Co.

The dyes are applicable by carrier or high-temperature dyeing methods and work well on top, tow, stock, or fabric.

At present eight colors plus black are available. They are:

Eastman Polyester Yellow W . . . produces bright greenish shades of yellow, of excellent fastness to light, washing, dry-cleaning, and solvent-spotting, that may sublime slightly on very heavy shades.

Circle D-8 on Reader-Service Card

Eastman Polyester Yellow 5R . . . a low-cost yellow with excellent fastness to light, washing, dry-cleaning, and solvent spotting that may sublime slightly on very heavy shades.

Circle D-9 on Reader-Service Card

Eastman Polyester Red B . . . has excellent fastness to sublimation, light, washing, wet pressing, and dry-cleaning.

Circle D-10 on Reader-Service Card

Eastman Polyester Red 2G . . . gives bright yellowish shades of red that are fast to light, washing, dry-cleaning, and sublimation.

Circle D-11 on Reader-Service Card

Eastman Polyester Blue GR . . . has excellent fastness to light, washing, sublimation, dry-cleaning, and wet pressing and is recommended for wool-polyester blends because of its low affinity for wool.

Circle D-12 on Reader-Service Card

Eastman Polyester Blue GLF . . . has excellent fastness to light, washing, dry-cleaning, sublimation, and wet pressing. Low affinity for cotton and viscose makes this color suitable for dyeing blends of viscose and cotton with polyester fibers.

Circle D-13 on Reader-Service Card

Eastman Polyester Blue 3 RL . . . a bright, reddish shade of blue with excellent fastness to light, washing, sublimation, dry-cleaning, and wet pressing. It does not change greatly under artificial light and is recommended for dark shades.

Circle D-14 on Reader-Service Card

Eastman Polyester Navy G . . . produces economical dark shades that are fast to light, washing, sublimation, dry-cleaning, and wet pressing.

Circle D-15 on Reader-Service Card

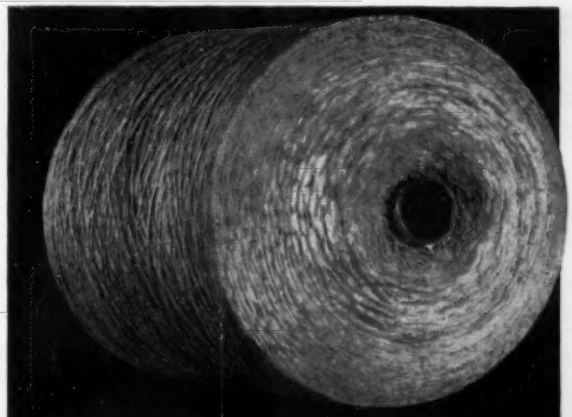
Eastman Polyester Black RB . . . is a diazo dye that produces full shades of black upon development that are fast to light and washing.

Circle D-16 on Reader-Service Card

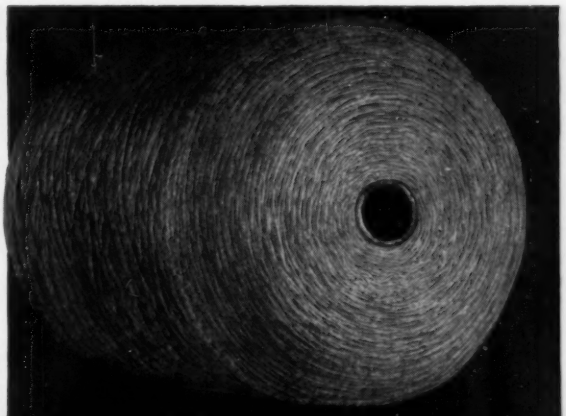
You don't add objectionable calcium when you use

MORTON '999' SALT

Chemical Grade



Ordinary salt high in calcium and magnesium content can cause you trouble in the form of off-shading, cut threads, costly shutdowns.



Morton '999' Salt is exceptionally low in calcium and magnesium content to help give softer finishes, more even shades, greater color intensity.

Morton '999' is a low-cost, high purity evaporated salt, free of objectionable calcium and magnesium compounds. '999' is 99.9% clean, pure sodium chloride for use whenever low calcium salt is needed.

As the chart, below, shows, for direct salting you may reduce the total calcium content by as much as 1950 parts per million by using '999' instead of common grades of ordinary salt. Where you are investing time and money in turning out a quality product, Morton '999' Salt is low-cost insurance against dyeing failures caused by excessive calcium in salt.

Available in 100-lb. bags or bulk, '999' is specifically recommended when direct salting is used in dyeing rawstock, package, beam, beck or jig with either sulphur, direct or naphthol dyes.

MORTON SALT COMPANY
Industrial Division, Dept. TW-10
120 South LaSalle Street
Chicago 3, Illinois

___ Please send me more information about Morton '999' Salt.

___ I would also like to know how much I can reduce calcium and magnesium content by using Morton '999' Salt. Please have a Morton Brine Engineer call on me to explain the benefits of using '999' Salt.

Name_____

Title_____

Company_____

Street Address_____

City_____ Zone_____ State_____

Ordinary salt averages 125-2000 PPM

PPM Calcium and Magnesium

Morton '999' Salt (Chemical Grade) is guaranteed to contain less than 50 PPM

MORTON SALT COMPANY
INDUSTRIAL DIVISION
Dept. TW-10, 120 So. La Salle Street, Chicago 3, Illinois

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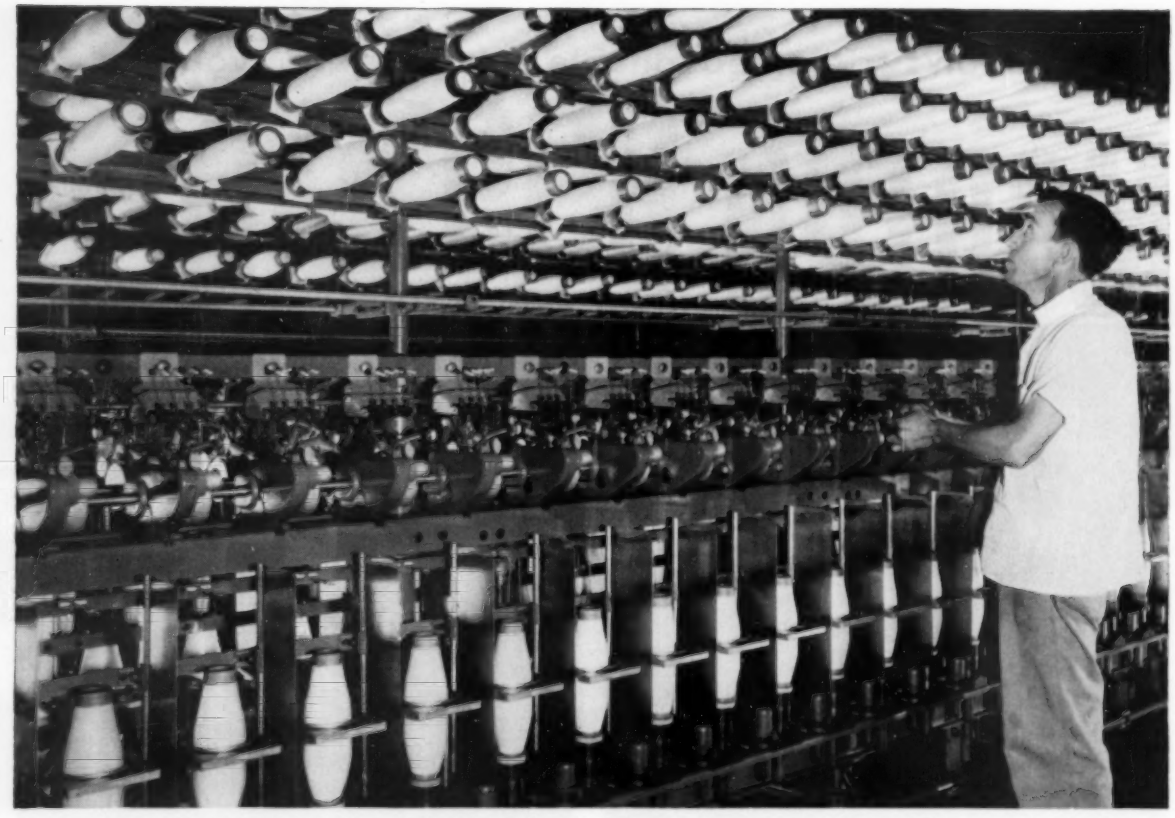

Leesona Model 10 Ring Twisters processing glass yarn at the Seguin, Texas, plant of the Coast Manufacturing and Supply Company. The firm produces Trevarno Glass Fabrics.

Producers of TREVARNO GLASS FABRICS chose Leesona Model 10 Ring Twisters

Years of research and planning went into the decision of Coast Manufacturing and Supply Company to enter the textile industry as processors and weavers of glass cloth. The 85-year-old Livermore, California, firm, with a long history in the manufacturing and distribution of safety fuse for the mining and construction industries, made the carefully-planned move into textiles in 1947.

Ralph E. Merritt, president of the firm, reports:

"After evaluating other types of twisting equipment, Coast Manufacturing and Supply Company decided upon the Leesona Model 10 Ring Twister."

Model 10's are used exclusively in Coast Manufacturing's 800-spindle twister installation in Seguin, Texas, producing a double-tapered package which can be used directly for filling and warping operations without rewinding.

Versatile Leesona Model 10's can also produce a tapered top or straight wind package. They are ideal for processing not only glass yarn, but rayon, spun rayon, nylon, silk, wool, worsted, cotton and combination yarns, and the new bulk and stretch yarns as well.

Make Your Own Evaluation

See how flexible Leesona Model 10 Ring Twisters can improve your own twisting operations. See your Universal representative or write direct.

23.6.11

UNIVERSAL WINDING COMPANY

P. O. BOX 1605, PROVIDENCE 1, R. I.

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Montreal • Hamilton, Canada

Winding and Twisting Machinery for Natural and Synthetic Yarns

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QUESTIONS and ANSWERS

Do you need help on a technical problem? TEXTILE WORLD is at your service in helping solve problems in yarn manufacturing, weaving, knitting, dyeing, finishing, and other textile operations. A large staff of mill men, consultants, and other experts are available for authoritative answers. Send your problem to the Editor, Questions and Answers, TEXTILE WORLD, 210 E. Coffee St., Greenville, S. C.

Acid Fulling for Wool Is Becoming Popular

Technical Editor:

What is the acid fulling process for wool, and how is it done? (9996)

The acid fulling process is similar to conventional soap and alkali fulling; but it is generally faster, and it results in a firmer and stronger fabric. Unless softened by a little oil, preferably red oil, the process generally produces a fabric with a harsher hand. To prevent staining by metallic oxides, a primary requisite is stainless-steel equipment with rubber rolls.

Different acids may be used; but the most popular seems to be sulfuric acid because of cost, and it gives better results. Probably one reason for the better results is that the acid combines with the sulfur in the wool to make a heavier and stronger fabric.

Here is one sequence of operations:

Prescour the goods as they come from the loom, carbonize with H_2SO_4, wet down in the washer with a warm neutral water, and full in a stainless-steel fulling mill. Add water only if the goods run dry in the mill. A little red oil added in the mill will soften the hand if the hand is harsh. If the goods are not to be carbonized, they are prescoured and the acid is added after rinsing and then put in the mill.

In piece dyeing with acid dyes, neutralizing is unnecessary. A good rinse in the dye kettle before dyeing is generally all that is necessary.

Acid fulling is being practiced more and more. Pressed-felt manufacturers, wool knitters, and blanket manufacturers are using the process.

One finisher recently had some 12-oz. fabrics of noils, hair, and rabbit fur that, when fulled in soap and alkali, had a breaking strength in the filling of 20 lbs. When prescoured and dried and fulled in a solution of 21 oz. sulfonated castor oil and 6° acetic acid, the breaking point was raised to 30 lbs.

Traveler and Yarn Clearance Is 1/16 In.

Technical Editor:

What is the correct relationship of barrel diameter of the package to the traveler ring diameter on twisting and plying machines? (9993)

On a full bobbin, the last layer on the package should have a clearance of at least $\frac{1}{16}$ in. from the inside edge of the traveler. For a 3-in. ring, this would mean a full-package diameter of about $2\frac{7}{8}$ ins. for a horizontal traveler and slightly less for the vertical-type traveler. Because some method is used to lubricate twister rings, care must be taken to allow sufficient clearance to prevent contact and possible oil stains.

On an empty bobbin, one machine builder recommends that the angle of yarn between the empty bobbin and the ring traveler should not be less than 21° measured from a horizontal line drawn through the center of the bobbin. For a 3-in. ring, this would give a 1.075-in. empty bobbin. The relation between empty bobbin and ring size, over a limited range, is about 1 to 3 ratio.

How To Prevent Glaze On Orlon Jersey

Technical Editor:

How can we prevent the objectionable glazing of fine-gauge Orlon jersey fabrics in pleating this material? (1243)

Insert one or two layers of heat-set nylon-tricot net fabric between the face of the jersey and the pattern paper. Then pleat the fabric in the usual way for Orlon.

The slightly rough noncompressible surface of the nylon will prevent glazing on the face of the jersey. You need not protect the back of the jersey since glazing on the back is immaterial. Practically any nylon net fabric such as marquisette can be used, but tricot is preferred since it stretches and does not wrinkle during pleating.

Once it is heat-set, the tricot can be used over and over again, since the heat-set nylon does not take the pleat. Heat-set the nylon at 400° F. to insure that the pleating temperature does not exceed the heat-setting temperature.

Introduce Dye for Rugs At Center of the Beck

Technical Editor:

We are dyeing 20-80 nylon-rayon tufted carpets. Our dye machine is 16 ft. wide and has a false bottom. We have been dyeing one to four pieces in this machine. Each dye lot weighs 250 lbs. to 1,100 lbs.

We are having some difficulty side matching these materials. The sides are darker than the center. What can we do? (1242)

We suggest you introduce the dye at the center of the beck under the false bottom. A short perforated T from 1 to 2 ft. in length will distribute the dye and at the same time concentrate it mostly in the central area of the beck.

Use Short Tenter For Uneven-Width Fabrics

Technical Editor:

We make heavily sized calendered coarse cotton fabrics, which vary in width in the loom state not more than ⅜ in. After calendering, this variation in width is 1¾ ins. How can this variation be reduced? (1241)

If you are calendering goods directly off the loom, expanders at the entering nip of the calendar will give uniform results only if let-off and take-up tensions remain constant. If you cannot keep uniform tensions at these two points, you will have to put the goods through a short tenter.

Use live steam directed at the cloth at the entering end of the tenter, and make some provision for drying out the cloth again before it leaves the tenter. Steam-heated coils about 15 ft. long would suffice. A 30-ft. tenter would be adequate. You could then set up the calender and tenter as a continuous operation.

Horsepower for Knitting Machines

Technical Editor:

Do you have any information on horsepower required to drive various knitting machines? (1234)

We have recently compiled the table below, which shows the motors required to drive most modern machines.

Full-fashioned hosiery

Single section	¼ hp.
Four section	¾ or ½ hp. (two speed)
30 section	7½ hp. (variable-speed d.c.)
32 section	7½ hp. (variable-speed d.c.)

Full-fashioned outerwear

Four section	1⅜ hp. (two speed)
Eight section	3 hp. (variable-speed a.c.)

Circular hosiery

52 P.W. machines	10 hp. (three phase)
60 women's seamless	15 hp.
48 Komet links machines	10 hp.
30 argyle	5 hp.

Tricot

168-in.	5 hp.

Raschel

Reiner	1½ hp.
Kidde Model C	1 hp.
Kidde Model E	2 hp.

Underwear (latch and spring needle)

Ribbers	½ hp.
9- to 14-in. cylinders	1 hp.
15- to 22-in. cylinders	1½ hp.
23 ins. and up	2 hp.

Underwear (Tompkins)

D-2 (per head)	¾ hp.
S-1	1 hp.

Outerwear

7- to 14-in. cylinders	¾ hp.
14- to 18-in. cylinders	1 hp.
19- to 26-in. cylinders	1½ hp.
27 ins. and up	2 hp.

Use Lard Oil On Lifter Rods

Technical Editor:

What type of lubricant should we use on lifter rods with cast-iron bushings? How often should we apply the lubricant? (1238)

Most mills use lard oil once every 24 hrs., but some mills lubricate the rods only twice a week.

Mohair Should Be Finer and Have Less Oil

Technical Editor:

What are manufacturers' preferences for mohair as regards quality, grease, and fineness? (9980)

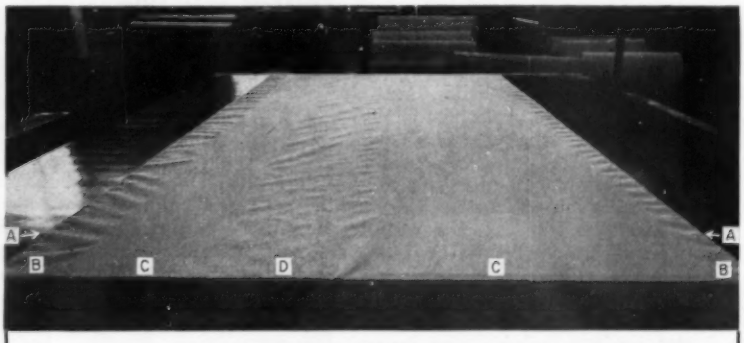
Manufacturers' preference is for mohair that has a crinkle or ringlets. Hair with a crinkle has advantages in the manufacture of almost all finished fabrics where mohair is used because it is easier to process and it produces better products. Better yields are also obtained from the scoured mohair.

As small an amount of oil and grease as possible is always desirable, although the best-quality mohair does not always contain the least amount of grease. A good quality should have preference over the amount of grease.

Finer grades, especially in kid mohairs above 40s grade, are very scarce in this country, while Turkey and South Africa have grades up to 50s. Most mohair lower in quality than 24s comes from poorly bred or old animals.

Improved breeding could produce higher grades. Finer mohair fibers would increase consumption, especially for summer clothes where larger percentages of fine-grade mohair are preferred.

Readers—What Do You Think?



Here is a piece of 205-den. nylon interlining woven on a C&K S-3 automatic shuttle-changing two-box loom. The construction is 80x60.

A shows three or four tight ends on the extreme edge of the fabric, although the rest of the selvage is slack.

B is a slack part of the fabric. Sometimes these bands appear to coincide with the temples on the loom, but at other times they are wider or narrower.

C is a relatively flat band on either side of the center, which varies in width from piece to piece and quality to quality.

D is a loose band in the center of the fabric.

These faults occur in other filament-nylon constructions. Care is taken to check the tension of individual ends during warping.

The most practical suggestions from readers to cure these slack and tight areas will be printed, and the writer of each printed suggestion will receive $10. Send your comments to—

Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

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. . . THE TOTALLY NEW NEEDLE LUBRICANT
for fine-gauge full-fashioned and seamless knitting machines

1. ***12 TIMES GREATER RUST PROTECTION*** than the best current oils . . . during both operating and shutdown periods.

2. **Eliminates green soap formation,** and minimizes machine oxidation.

3. **Controls nylon size deposits,** and permits easy cleaning during shutdown periods.

4. **Very low surface tension,** resulting in increased wetting and lubrication.

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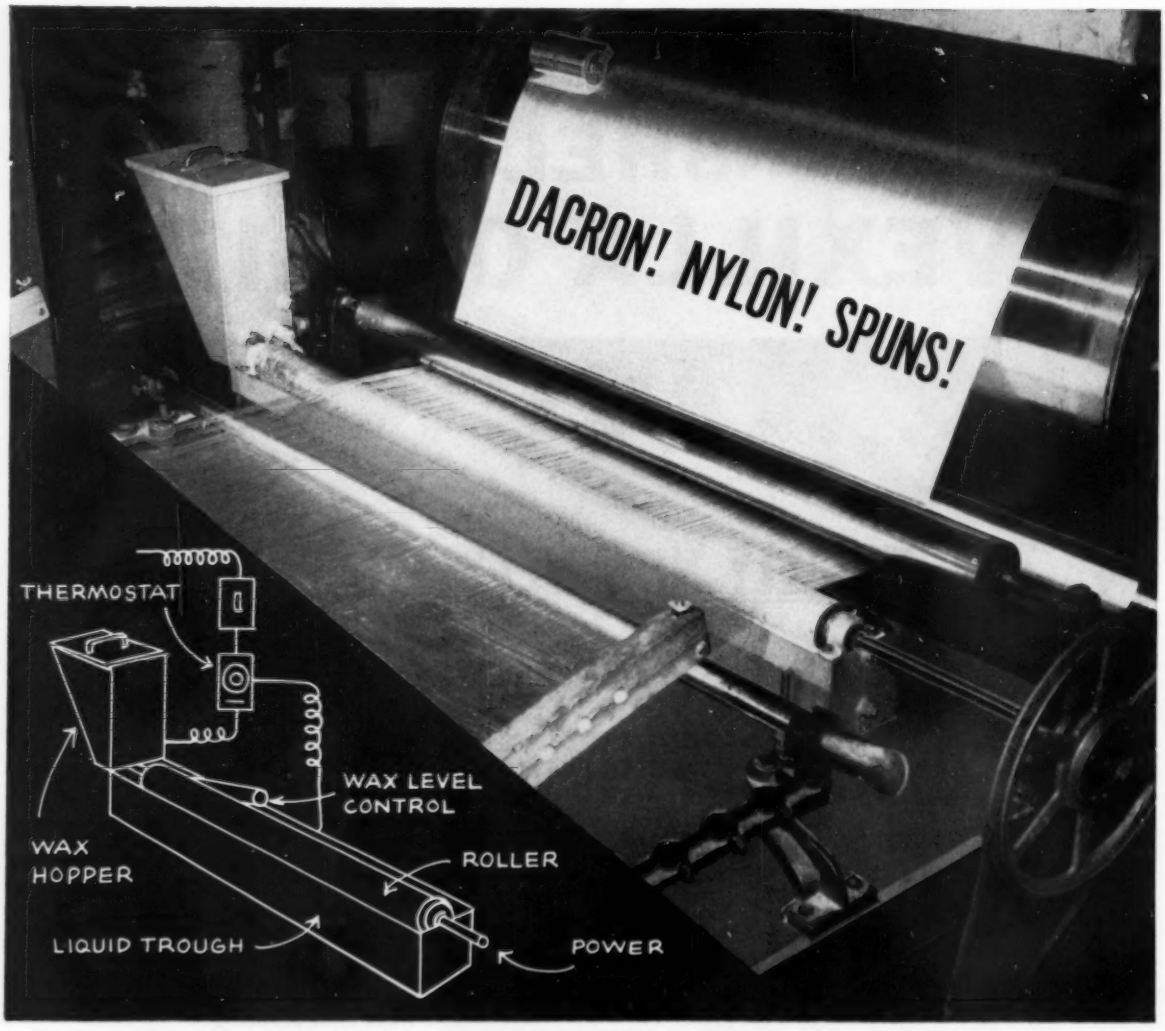

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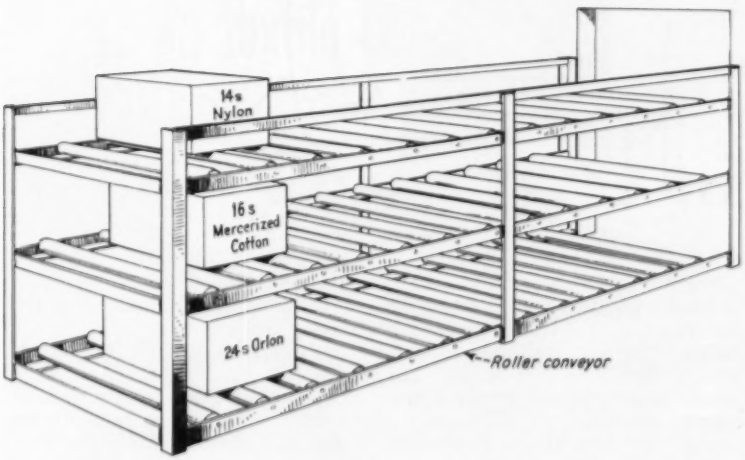
KINKS and SHORT-CUTS



Roller-Conveyor Racks Speed Yarn Handling

Lack of yarn-storage space presented both a storage and transportation problem in our mill. Operators found it difficult to push trucks through the storage room and to find required numbers and types of yarn because of the scattered and jumbled boxes.

We solved the problem by building long racks with roller conveyors instead of shelves. The racks are loaded on one side of the room and unloaded on the other side. The bottom level is loaded from a regular two-wheel dolly; the upper levels are loaded by a fork-lift truck.

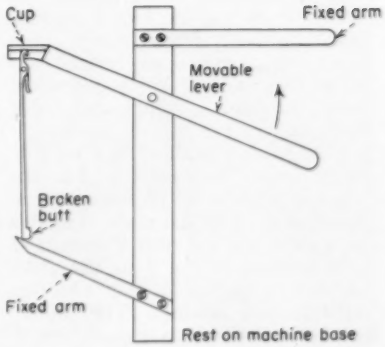
The arrangement multiplies available storage space, makes it much easier to keep yarn separated by lots, and saves much time and labor. (K-3110)

Weave 30 Ppi. With 60-T. Pick Gear

To weave a fabric with 30 ppi. on an XD loom with ratchet take-up where only 60-T. change gears are available, the required picks can be inserted by setting the pallet arm to take up two teeth at a time instead of one.

Similarly, any number of picks can be woven by using a gear with twice the required number of teeth. By using this method, the inventory of extra pick wheels can be cut in half. However, care must be taken to set the arm so that it gets exactly the same stroke each pick. (K-3106)

Bernard Dixon, Providence, N. C.



How To Remove Broken Needles

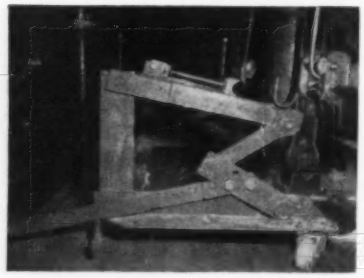
Circular-hosiery-machine needles are difficult to remove when the butt breaks off. They are usually removed with pliers after the bottom part has been forced from the slot.

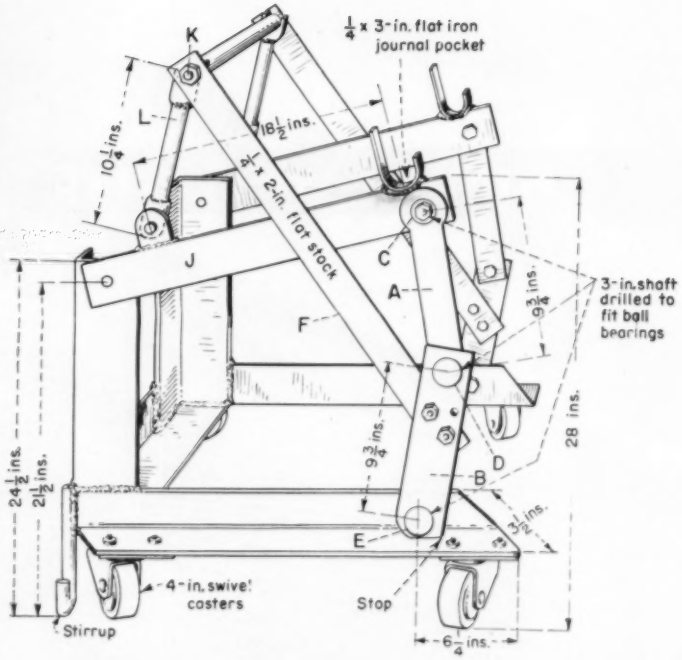
You can make a gadget to do this job more quickly. Drill five holes in a steel bar about 6 ins. long. Fix two arms to this bar. Grind the lower arm so that it fits into the slots of the cylinder. Between the two arms, fasten a lever that can be pivoted. Weld a cup on the end of this arm to receive the head of a needle.

Push the bar against the cylinder opposite the broken needle. Insert the bottom arm below the broken butt, and press the lever up to bring the cup down on the head of the broken needle.

Hold the top arm and the lever arm in a scissors-like grasp, and press the two together. The needle will be pushed down, and the bottom part will slide out of the slot so that it can be grasped easily with pliers. (K-3007)

H. J. Haas, Martinsburg, W. Va.





Mill-Made Dolly Lifts 480-Lb. Doffer Cylinder

In our mill, four men formerly were required to lift the doffer cylinder out of a card frame and load it on a flat truck. Even with four men handling the cylinder, danger from back strain and other injuries was great. To make this job easier and safer, we built a lifting dolly that requires only two men to operate.

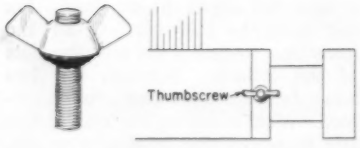
The frame is made of 3½ x 4 x ⅜-in. angle iron. Three-ply ¼ x 2-in. flat stock is used for the lift arm. Arm *A*, made of ½ x 2-in. flat stock, is welded to ends *C* and *D*. Arm *B* consists of two pieces of ¼ x 3-in. flat stock welded to spacers at each end that contain ball bearings. The journal pocket is welded on top of arm *J*, which is made of ½ x 3-in. flat stock.

Inside measurement of the dolly frame is 51 ins., and the distance between the journal pockets is 49 ins. The dolly, mounted on 4-in. swivel casters, is used to service 40-in. Saco-Lowell cards that have a 480-lb. doffer cylinder.

To use the dolly, we first take off the front of the card, lower the dolly's lifting arms into position, and roll the device forward so that the journal pockets are beneath the doffer-cylinder journals.

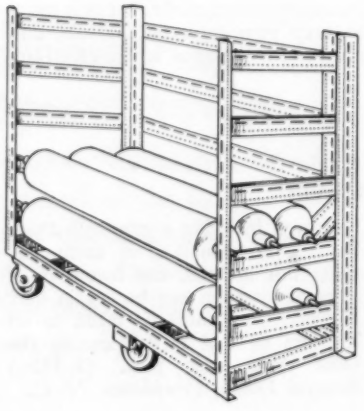
The two men stand at opposite ends of the dolly and put one foot in a stirrup to steady the dolly. Handle *K* is raised steadily to its top position and locked in place with latch *L*. The cylinder, lifted from the card, is then rolled out of the working area for repair.

Used properly, the dolly prevents injury to operators and damage to card clothing. The cylinder journals are the only parts in contact with the dolly. The diagram shows the dolly with handle in raised position and locked; the photo shows the handle in lowered position. (K-3123) *G. B. West, Beaumont Div., Spartan Mills, Spartanburg, S. C.*



Lock Warper Comb With Thumb Screw

The vibration of high-speed warpers running old beams sometimes causes the comb screw to loosen, and the result is a bad selvage. The comb can be locked by drilling a hole in the end bracket next to the handle and inserting a thumb screw. If a thumb screw is not available, make one from a wing nut welded to a bolt. (K-3081)

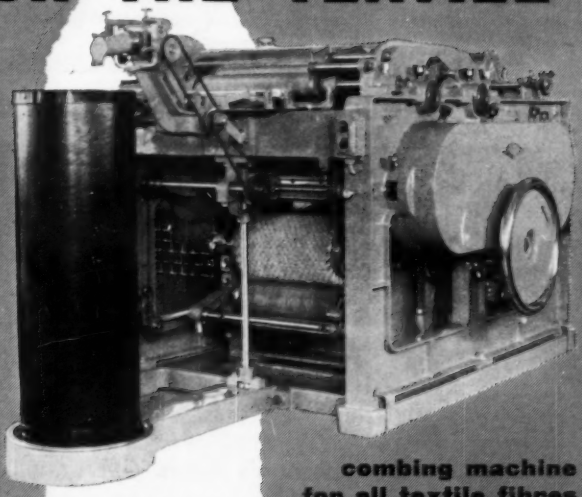


Slotted Aluminum Racks Cut Truck Weight

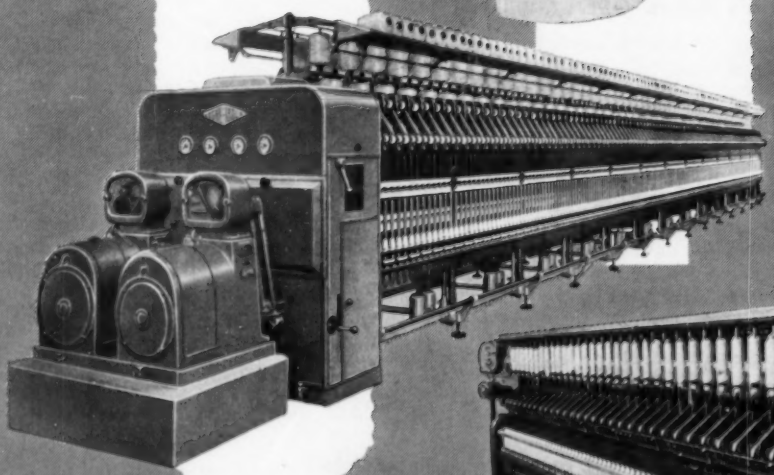
Our mill formerly transported wool slubber bobbins in hand trucks that weighed more than 200 lbs. each. These trucks, with the added weight of the wool, were a heavy load for the operators to push. We solved the weight problem by building racks from slotted-aluminum alloy that weigh only 45 lbs. each and have ball-bearing wheels. Now, the operators move much faster and are more efficient. (K-3132) *Target*

MACHINES FOR THE TEXTILE INDUSTRY

roller spindles
for all textile fibres

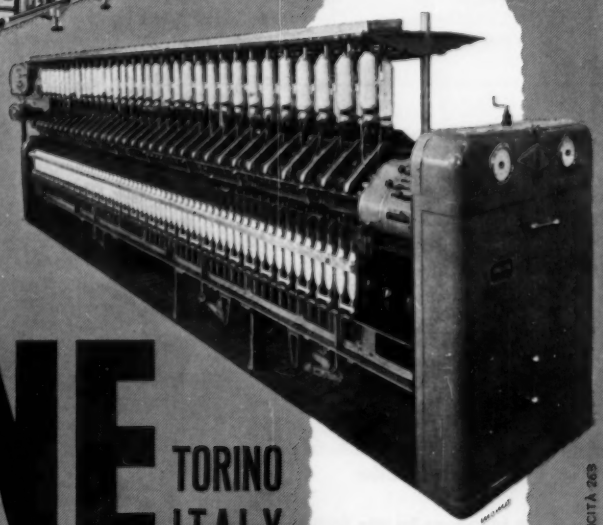


combing machine
for all textile fibres



spinning machine
for coton

spinning machine
for combed wool



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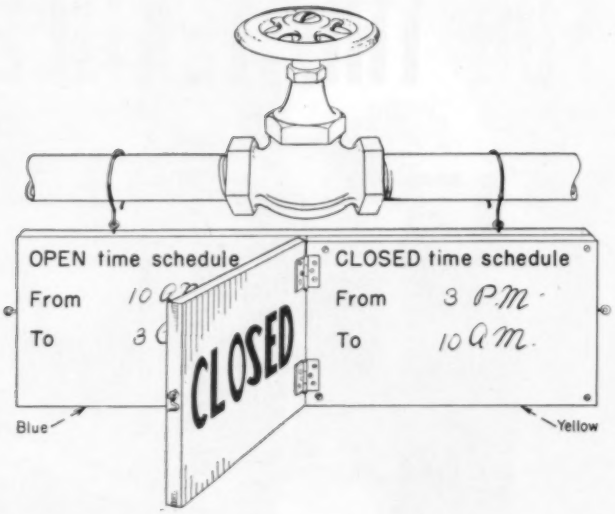


Time-Schedule Board Controls Valve Operation

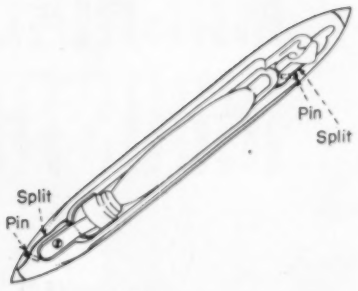
When it is necessary to open or close valves on schedule, we hang a blackboard on the valve so that the operator can see at a glance if the valve is open or closed, when it was opened or closed, or when it should be opened or closed.

The blackboard is divided into halves; and one-half the face is covered at all times by a hinged cover. The cover is painted blue on one side and yellow on the other. The word "open" is painted on the yellow side and "closed" on the blue side.

A hook on the hinged board is dropped into eyes at either edge of the blackboard when the board is swung to one side or the other as the valve is open or closed.

The board, with proper notations, tells us quickly just what is going on in any chemical-delivery line and how long it has been going on. (K-3177)

H. Fukaya, Japan.



Use a Simple Pin Repair To Salvage Split Shuttle

A shuttle is usually discarded when the wood splits near the eye or the bobbin clip. Many such shuttles can be salvaged and will give extra hours of service. To salvage them, we drill a small hole at an angle through the split place and insert a beveled pin. The hole should be slightly smaller than the pin and only as deep as the unbeveled part of the pin.

When the end of the pin is driven into the wood at the bottom of the hole, the beveled end will clinch and hold fast. The pin should be countersunk about ☆ in.; the wood should be pressed down against the end of the pin to help prevent the pin from coming out of the shuttle. (K-2819)

Arthur Abbott, Berwick, Pa.

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Plus $5 to $10 for Every Kink Accepted

What Is a Kink?

Any idea that will

- Cut costs
- Improve quality
- Reduce work
- Increase production
- Make work easier

The idea may be one for improving machines, some attachment for a machine, a short-cut way of doing something, a labor-saving device—any idea at all that helps a mill man run his job better or easier.

Send in your Kink now. There is always a contest going on.

RULES OF CONTEST

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2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1956.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawing need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kinks, and their decision will be final. In case of ties, duplicate prizes will be awarded.

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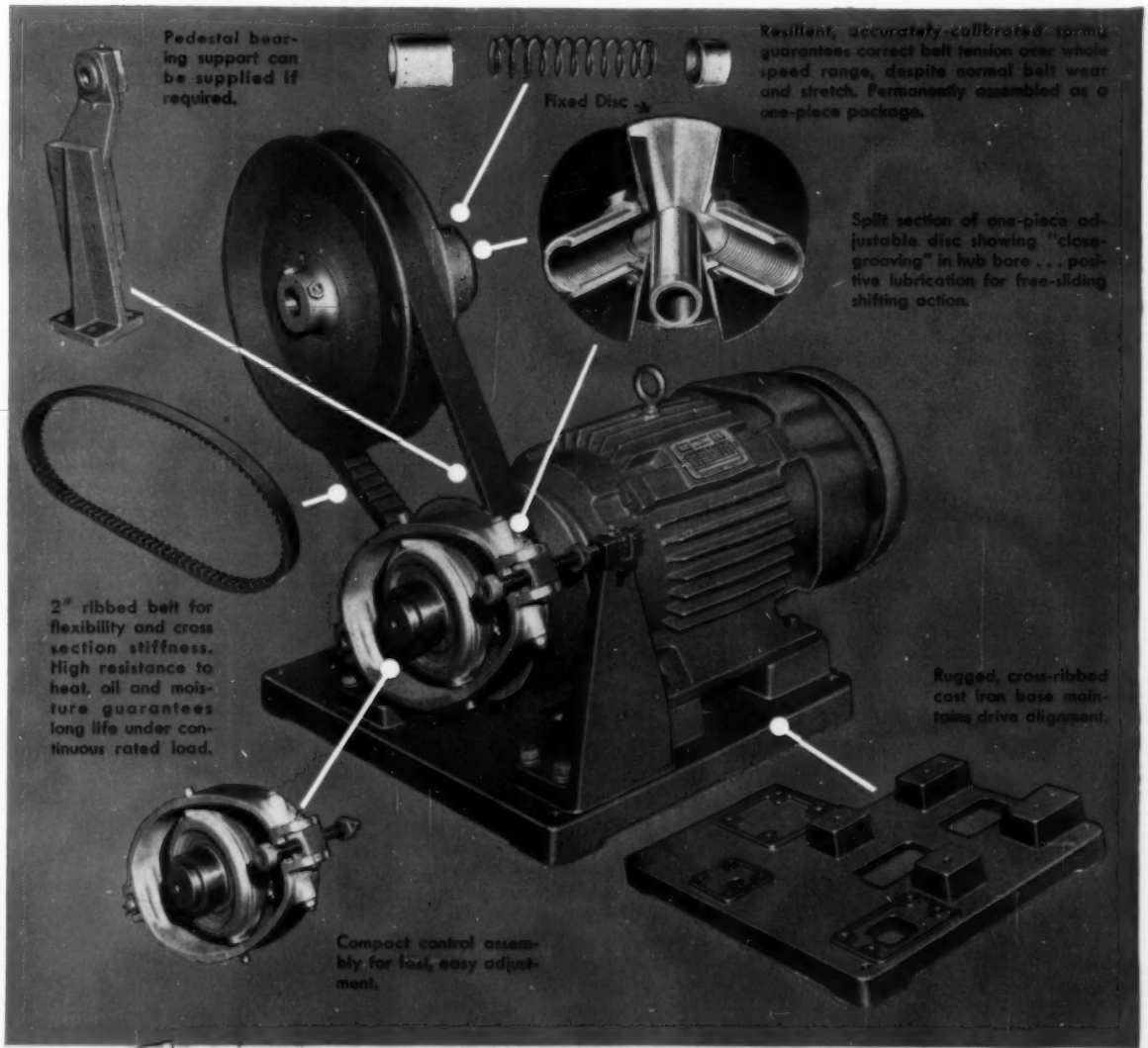
Spinning Frame Drive: The drive that reduces fixer labor costs, increases spinning production, quantity and quality! 7½ to 15 hp! Any speed setting from 500 to 1450 rpm. at cylinder shaft . . in *seconds . . . while frame is running!*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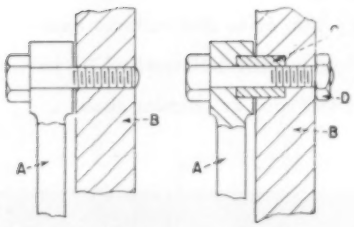


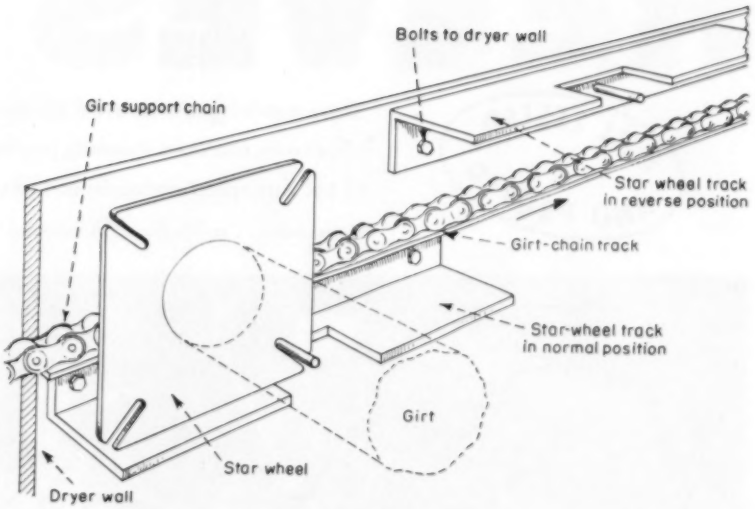
Fig. 1 Fig. 2

Strengthen Pivot Bearing By Use of a Bushing

Swinging link *A* suspended on a single $\frac{3}{8}$-in. bolt, as shown in Fig. 1, frequently caused the bolt to break or become unscrewed from the tapped hole in part *B*.

To overcome the trouble, the link boss and the bolt hole in part *B* were countersunk a short distance, as shown in Fig. 2, and a bushing *C* was inserted in the hole. The bolt could then be locked against rotation by fitting on half-nut *D*.

The half-nut also permitted the side clearance between the link boss and part *B* to be adjusted to the minimum to prevent noisy operation. By limiting the depth of the countersink in the link boss to about one-half the boss width, the strength of this cast-iron part was unimpaired. (K-3046) *Clifford T. Bower, London, England.*



Stop Loop Dryers From Wrinkling Cloth

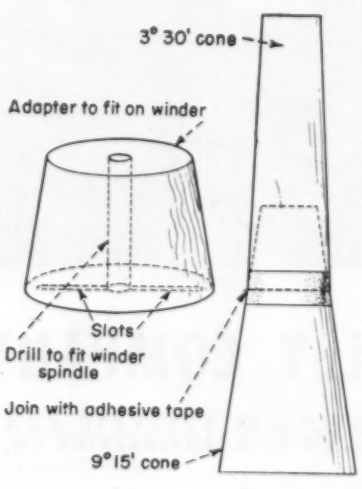
Loop dryers used for drying and curing resin-finished goods often produce short creases that are serious enough to degrade the fabric. The creases are formed as the girts turn while they progress through the first half or two-thirds of the dryer.

The dryer can be easily modified to reduce hard creasing by rearranging the turning mechanism so that the motion is reversed every three or four girts.

On dryers that employ star wheels, the track that guides the wheels also carries the studs that turn the wheels. This track is cut into 2- to 3-ft. sections, and each alternate section is mounted over the star wheels.

Care must be taken to allow enough overlap so that the star wheels do not spin; and be sure that no stud engages the star wheel during the overlap period. The chain carrying the girts is supported independently of the star-wheel guides.

About half the track should be modified so that the cloth is practically dry before motion ceases, and you will have a minimum of wrinkles and hard creases. (K-3032)



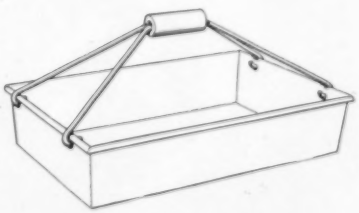
Make a Bottle Bobbin From Two Cones

We knit our fine wool yarns from bottle bobbins. Formerly, we used conventional wooden bobbins, and some yarn was usually left on the cone after the order was finished. The storage of this yarn became a problem because of the size and expense of the wooden bobbins.

We solved our problem by using two modified paper cones to form a bobbin. Here's how to do it:

Cut 1 in. off the top of a 9° 15′ cone with a sharp knife. Press a 3° 30′ cone, which is used for rayon yarn, over the 9° 15′ cone. Join the two cones with adhesive tape.

Use a small wooden cone, drilled and slotted to fit on the winding machine, as an adaptor during winding. (K-3119) *J. & P. Kovesi, Sao Paulo, Brazil.*

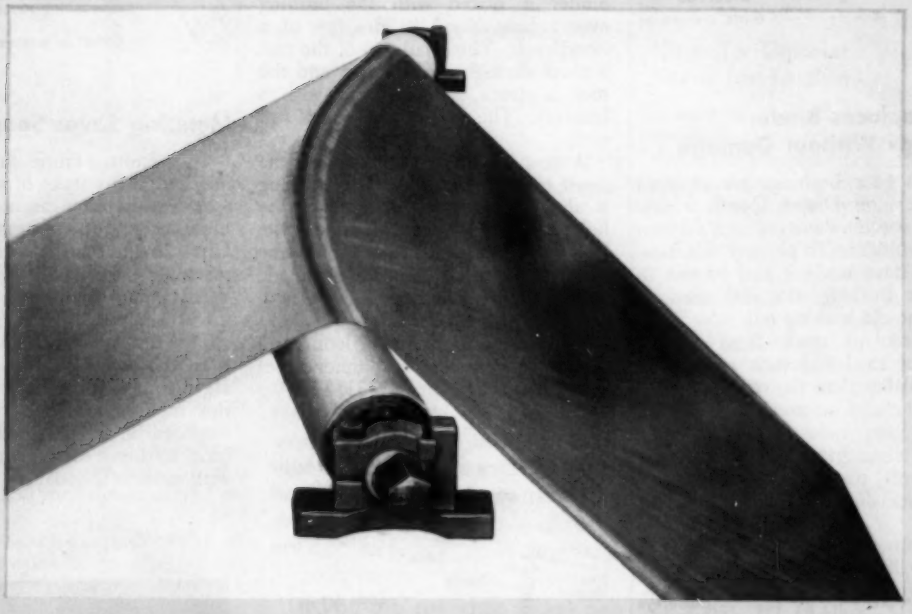


Handle Keeps Tote Box From Spilling Contents

Tote boxes and other small containers often tilt and spill their contents while being carried about the job. A double bail attached to holes near the corners of the box, as illustrated provides a handy method of carrying the box and keeps it from tilting. (K-3045) *Chas. H. Willey, Concord, N. H.*

Mount Hope SYSTEM

"FREE WHEELING" EXPANDERS will keep your FABRICS DISTORTION-FREE!



Mount Hope "FREE WHEELING" EXPANDERS give you maximum width with minimum warp tension, assuring distortion-free, wrinkle-free fabrics. Eliminate spoiled yardage by keeping your fabrics smooth!

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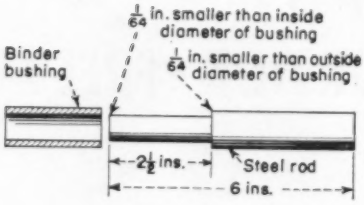

1/64 in. smaller than inside diameter of bushing
Binder bushing
1/64 in. smaller than outside diameter of bushing
2½ ins.
Steel rod
6 ins.

Tool Replaces Binder Bushings Without Damage

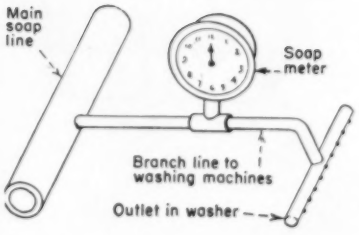
When fiber bushings are replaced in binders on Draper looms, a new bushing is often damaged as it's driven into the binder. To prevent this damage, we have made a tool to put in the new bushing; it's also used to knock the old bushing out.

The tool is made from a 6-in. length of steel rod with a diameter $\frac{1}{64}$ in. smaller than the outside diameter of a new fiber bushing. About 2½ ins. of one end of the rod is turned down in a lathe so that it just slips inside a new bushing. A square shoulder is left where the lathe-cutting operation stops.

To knock out an old bushing, the binder is placed with the bushing over a hole bored in the top of a workbench. The small end of the tool is stuck through the bushing, and the tool is struck a sharp blow with a hammer. The bushing is pressed out easily.

A new bushing is slipped over the small end of the tool. The bushing is aligned with the binder over the hole in the workbench. Then the bushing is tapped gently into the binder. In this way, no burs are made on the bushings and they aren't damaged at all.

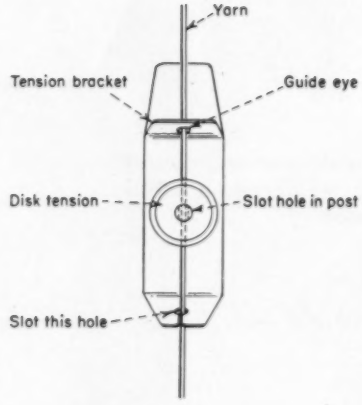
We have several types of looms and binders, and we use a different tool for each size bushing. (K-3118)



Metering Saves Soap

In a knitted-fabric finishing plant handling many styles of woolen goods, soap consumption can be reduced and more-accurate processing results obtained if the soap is metered to each machine.

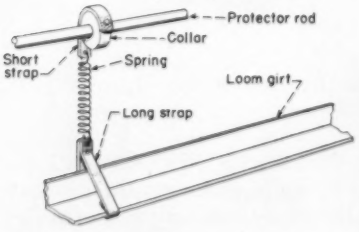
A standard solution of soap is made up and piped to the scouring machines through a branch line leading from the main soap line, and meters are provided for each washer. With this method, the correct amount of soap can be added as needed, in contrast to hit-or-miss quantities added with pails. (K-3101)



Slots in Tension Help Thread Yarn Quicker

Multifeed knitting machines require 30 mins. or more to thread with yarn. The washer-type tension gives lots of trouble. The two bottom holes are the most difficult to thread because they are so close together.

You can save time by slotting these two holes. Cut the slots so that the yarn does not rub against the slot edge when the machine is running. (K-3041)

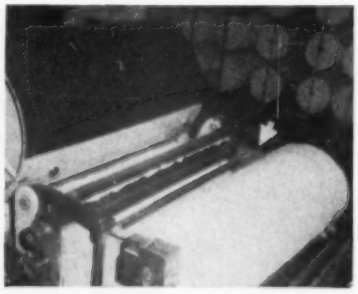


Use a Pull Spring On the Protector Rod

A spring hook-up for the protector rod of a W-3 loom can be easily made and installed. Use a 13-in. coil spring, a piece of leather 5 ins. long, and another piece of leather 17 ins. long.

A setscrew long enough to protrude through a hole in the short piece of leather is used in the spring collar. The spring is attached to the loose end of the short leather, as illustrated, and the long piece of leather is fastened to the spring and loom girt.

The spring tension can be adjusted in the usual way by turning the spring collar. The assembly keeps moving metal parts from touching, and there is no wear on the protector rod or spring. (K-3112) *Arthur Veilleux, St. Georges, Que.*

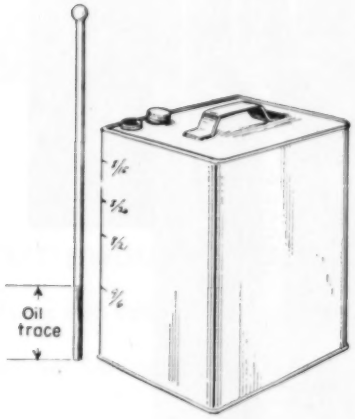


Prevent Rough-End Laps

Our pickers used to make rough-end laps caused by the cheek plates in front of the pickers working loose and vibrating against the ends of the laps.

We eliminated the trouble by bracing the plates with a bar of 1¼-in. cold-rolled steel, turned and threaded on the ends. The bar (arrow) was inserted between the plates, as illustrated. The improvement was so great that we have installed similar braces on all our pickers. (K-2775) *Clara Plant, Botany Mills, Inc., Gastonia, N. C.*

August Prizewinning Kink



The best Kink published in the August issue of TEXTILE WORLD, according to our reader-judges, was:

"Mark Oil Cans To Prevent Running Dry"

By Hokao, Fukaya,
Katsuyama Bros. Co.,
Katsuyama, Fukui, Japan

The winner is being sent a check for $25 with the compliments of TEXTILE WORLD.

The prizewinning Kink is reprinted at the left.

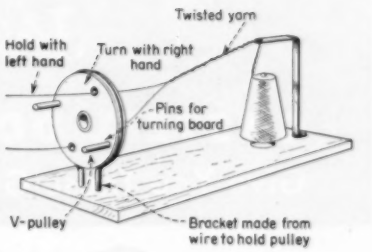
Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answers in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

Mark Oil Cans To Prevent Running Dry

We use oil in our sizing and soaking compounds at irregular intervals. It used to be that very often we'd send to the supply room for a can of oil and discover that the can did not contain enough to meet requirements. Our mill is some distance away from a source of supply, and naturally this shortage caused inconvenience and annoyance.

We overcame this problem by requiring the operator to measure the oil with a rod or stick after each use and then mark the depth of the oil and the date on the outside of the can with a piece of chalk. The date on the can is a check to make sure the operator does not forget to measure the oil. We have not run out of oil since we started marking the cans. (K-2849) *Hokao, Fukaya, Japan*



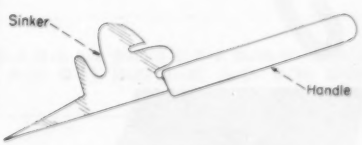
How To Untwist Yarns for Testing

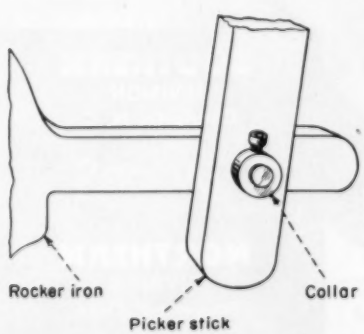
Twisted yarns sometimes require untwisting to check the yarn numbers where the components are of different size or to check the dyeing. This process is slow if done by hand. You can speed up the job with this method:

Drill two holes in a V-pulley and mount porcelains in the holes. Mount the pulley on a board with a stiff wire that encircles the pulley and acts as a bearing. Two pins on the circumference of the pulley will help it turn better.

Fit a yarn take-up bracket about 18 ins. from the pulley, and place the yarn to be untwisted under the take-up. Thread the yarn through the take-up, and lead each end to the holes in the pulley.

Hold the untwisted ends in your left hand, and gently pull while you rotate the pulley with your right hand. (K-3008) *H. J. Haas, Martinsburg, W. Va.*





Rocker-Iron-Stud Collar Holds Picker Stick Tight

Many multiple-shuttle looms have a large cotter pin to keep the picker stick attached to the rocker-iron stud. This cotter pin will eventually wear out and let the stick slip off the stud.

Thin steel collars that fit over the stud will hold the stick firmly in place. Some of the collars come equipped with socket setscrews, which can be replaced with regular setscrews if desired. (K-2820) *Arthur Abbott, Berwick, Pa.*

Latch-Needle Cleaner Is Easy To Make

We make our needle cleaners from fine hosiery-machine sinkers shaped on an emery wheel and made fine enough to pass through the slots in the latch needle. A handle is added as shown.

When the latch causes streaks in the fabric because lint or wax obstructs it, the sinker soon removes the obstruction. (K-3120) *J. and P. Kovesi, Sao Paulo, Brazil.*

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CASTEEL DOBBY CORDS

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Open End Cast right to wire core. Will not pull out. Eliminates "S" hooks. Also available with closed eye.

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. October, 1956

Outstanding NEW LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for October are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY AND AUXILIARY EQUIPMENT

Slitter and rewinder—In 40-, 50-, and 60-in. sizes for paper, nonwoven fabrics, coated fabrics. Folder from Hobbs Mfg. Co. (F-1)

Curing oven—For resin finishing. Gas-fired three-section units can be supplied with temperature controls. Bulletin CO10. James Hunter Machine Co. (F-2)

High-speed winder—For cotton, rayon, woolen yarns. Speeds to 750 yds. per min. Form A95. Foster Machine Co. (F-3)

Improved shear—For cotton, rayon, synthetics fabrics. Speeds to 120 yds. per min. Vertical blades, individually driven. Hermas Machine Co. (F-4)

Filling winders—Produce loom bobbins filled and stacked in boxes automatically. Operate at 11,000 rpm. Have built-in lint collector. Scharer Textile Machine Works. (F-5)

Raschel machines—In several models for specific purposes. Rigid construction, larger motors, and improved lubrication featured in Model-E series. Kidde Mfg. Co. (F-6)

Chenille machines—For bedspreads, rugs; 2 to 24 needles, high and low pile. Broad St. Machinery Co. (F-7)

Opener and rotary feed—For all fibers. Main cylinders to 72 ins. wide. Capacities are 2,000 to 3,000 lbs. of wool, 2,000 lbs. of cotton or synthetics per hour. C. G. Sargent's Sons Corp. (F-8)

Ring twister—Tape-driven, 40-spindle unit that can be supplied with 2½- to 4½-in.-dia. rings. Improved gear drive, centralized lubrication if desired. Whitin Machine Works. (F-9)

Bobbin-tip painter—Applies lacquer to top, bottom, or both ends of bobbins. Portable motor-driven unit. Jarrell-Bullard Co. (F-10)

Galvanized drop wires—Resist rusting under weave-room conditions. Samples from Steel Heddle Mfg. Co. (F-11)

SUPPLIES AND CHEMICALS

Liquid neoprene—Protective-coating material resistant to weather and chemical attack, can be applied by all methods, needs no curing. Gates Engineering Co. (F-12)

Plastisol coatings—For ducting, tanks, subject to corrosive fumes; based on polyvinyl chloride. Quelcor, Inc. (F-13)

Floor sweeps—Industrial sweeps made with nylon filament. Long life, chemical resistance, easy cleaning featured. E. I. du Pont de Nemours & Co., Inc., Polychemicals Dept. (F-14)

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NEW LITERATURE Continued

Hand dryers—Electrically heated hot air supplies drying medium in industrial washrooms. National Dryer Sales Corp. (F-15)

Crack detector—Special dye, developer, and cleaner supplied in pressure cans, detects flaws in castings, welded joints, forgings. Magnaflux Corp. (F-16)

Industrial paints—Fume-resistant high-reflection paints for factories, in brush- or spray-application types. Arco Co. (F-17)

Metal primers—For exposed metalwork, inside or outside. Types for various purposes. Form 880. Valdura Paint Div., American-Marietta Co. (F-18)

Detergent oils—For hydraulic systems, circulating systems, pumps. Clean and prevent rust. Tech. Bulletin 44 from Sun Oil Co. (F-19)

Water conditioner—Keeps algae, slime, and corrosion under control in water and in air conditioners. Oakite Products, Inc. (F-20)

Cutting fluids—Vol. 42, No. 4 of *Lubrication* discusses cutting fluids, proper choice, care, and application. Texas Co. (F-21)

MAINTENANCE AND ENGINEERING

Masonry drill—Attaches to ¼-in. electric drill, adustable to three degrees of force, automatic clutch. Rawlplug Co., Inc. (F-22)

Flexible couplings—For ¼- to 100-hp. applications. Cat. F-26. Charles Bond Co. (F-23)

Industrial ball bearings—Wide variety of types described in Cat. 454 from Stephens-Adamson Mfg. Co. (F-24)

Reed grinder—For grinding and polishing loom reeds. Returns old reeds to new condition, handles reeds to 106 ins. Edda International Corp. (F-25)

Variable-speed transmissions—Belt-driven, infinitely variable speed reducers described in Cat. 65 from Lewellen Mfg. Co. (F-26)

Fire extinguishers—Portable and permanent installations of CO_2 equipment for industrial fire protection. Vol. 13, No. 1 of *Kidde Industry*. Walter Kidde & Co., Inc. (F-27)

Automatic door controls—Electronic and hydraulically operated controls for opening doors described in Cat. S. Stanley Works, Magic Door Div. (F-28)

Indicating temperature controller—Bulb-and-capillary types accurate to ±2° F. under optimum conditions. Six temperature ranges, three F., three C. External adjustment. Fenwal, Inc. (F-29)

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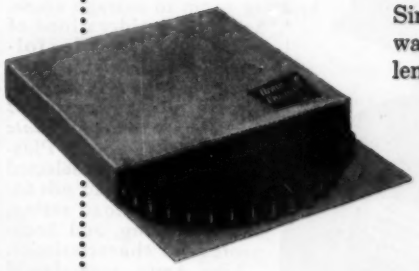

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Faultless CASTER

MATERIALS HANDLING

FACTS

AMES TEXTILE CORP. USES 3-UNIT, CASTERED SYSTEM FOR HANDLING YARN AND KNITTED GOODS PRODUCTION

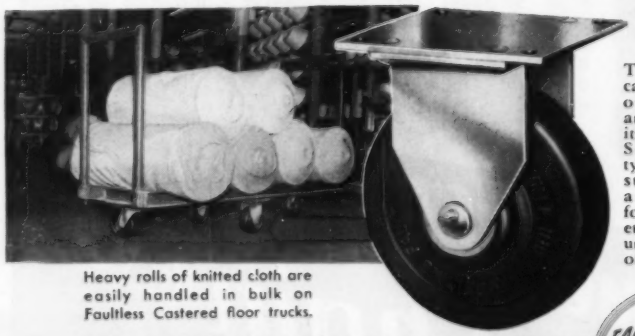
Frequent movement of materials during the production stages of knitted cloth requires the most flexible and maneuverable of materials handling systems. Ames Textile Corp., Lawrence Div. Mills at Lowell, Mass., has developed a 3-unit, integrated system of moving their high quality yarn and knitted goods during production, and Ames executives decided upon a fleet of specially built, Faultless castered trucks for these functions: (1) moving cones of yarn from the spinning frames to humidifying rooms, (2) transporting the moisture controlled cones of yarn to knitting rooms, and (3) handling heavy rolls of knitted cloth from knitting room to storage areas.

Several considerations of casters were made, followed by the *exclusive selection of Faultless 931-6 Double Ball Bearing Swivel Plate and 9731-6 Rigid Plate Casters.* 6" diameter Plaskite wheels were selected for their combined advantages of high load rating, ease of rolling, and floor-protection characteristics.

Like Ames, you should investigate the numerous advantages of Faultless castered trucks as the backbone of the handling system in *your own plant.*

SERIES 900 DOUBLE BALL BEARING SWIVEL CASTER

This all-purpose caster outperforms the ordinary kind because of design features including complete choice of wheels to suit floor surfaces, loads and operating condition; 2 full rows of hardened ball bearings rolling in hardened, lubricated raceways; full drawn steel horn formed for surplus strength.



Heavy rolls of knitted cloth are easily handled in bulk on Faultless Castered floor trucks.

SERIES 9700 RIGID PLATE CASTER

This rigid type caster has same overall heights and load capacities as the 900 Series Swivel type. The heavy steel top plate and sides are formed and riveted into a single unit. Full choice of wheels.

FAULTLESS SOLVES THE TOUGH JOBS

FAULTLESS CASTER CORPORATION

EVANSVILLE 7, IND.

NEW LITERATURE Continued

Electronic air cleaners—Rated at 95% efficiency for air velocity of 450 ft. per min. Package and field-assembled units available. Cat. E-90. Trion, Inc. (F-30)

Plug-in busway — Factory-assembled units that can be plugged in directly to bus bars. Bulletin GEA-6470. General Electric Co., Distribution Assemblies Dept. (F-31)

Air-powered actuators—Piston-type air motors applicable to many operations in manufacturing. Valve gear, speed regulation built into unit. Bulletin ML-3R. Bellows Co. (F-32)

Workbench conveyor — Portable and stationary models from 5 to 60 ft. long, belt widths 10 to 24 ins. for assembly-line work. Rapids-Standard Co., Inc. (F-33)

Roof ventilators—Hooded, quiet-operating fans for vertical mounting. Bulletin DWA-101 describes models. Detroit Blower Co. (F-34)

Variable-speed drive—For drives of 1 to 20 hp. Special variable-pitch sheave, belt, and companion sheave make up the unit. Not adjustable while running. Bulletin 497. T. B. Wood's Sons Co. (F-35)

GENERAL

Maintenance tips—On overhead trolley conveyors. Routine laid out for periodic inspection, lubrication of all parts of system. Rapistan-Keystone, Inc. (F-36)

Fork trucks — LP-gas-powered trucks in 2,000- to 10,000-lb. capacities, permanent and changeable gas tanks. Yale & Towne Mfg. Co. (F-37)

Electric typewriter—Available with various kinds of type, several colors, for personalized correspondence. Booklet RE-8811. Remington Rand Div. of Sperry Corp. (F-38)

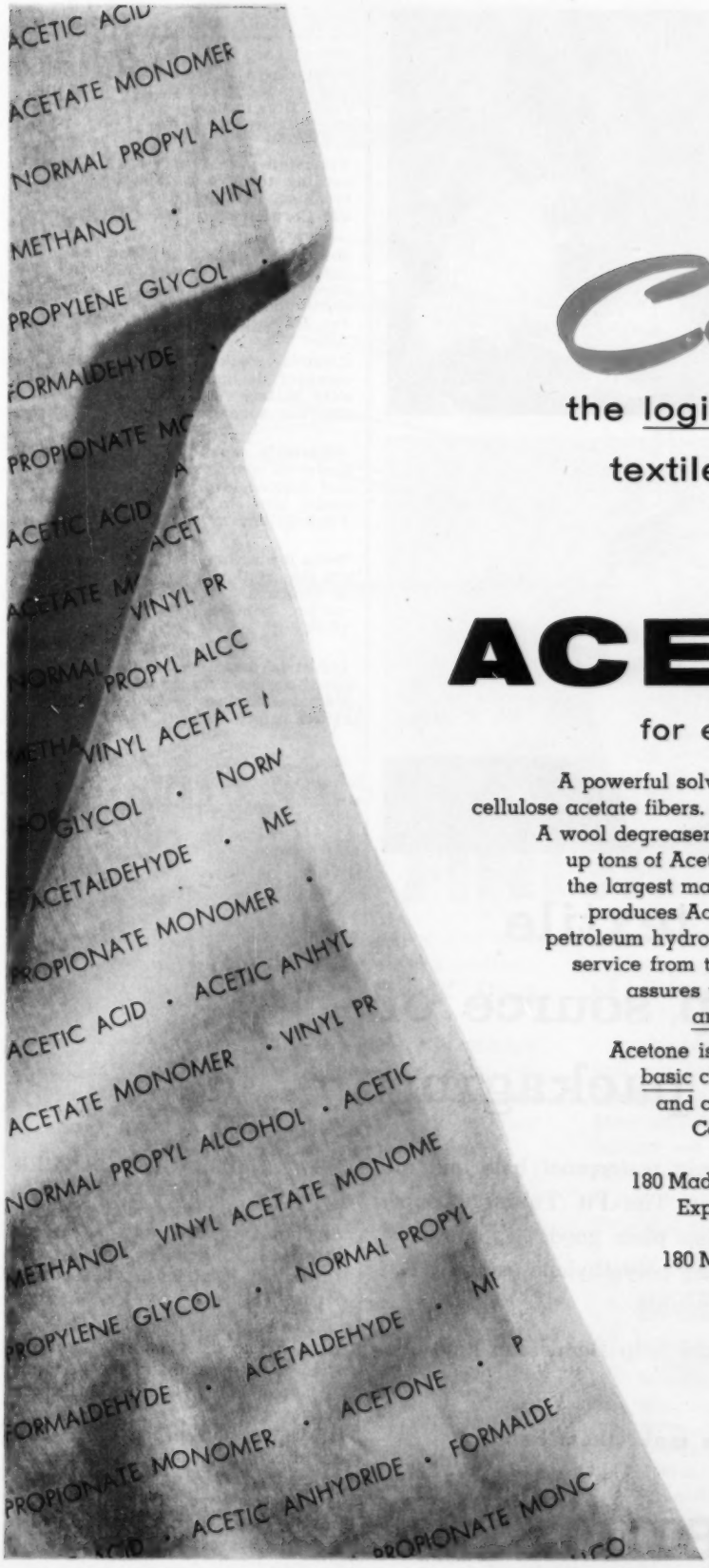
Stacking boxes—How to stack corrugated boxes to best advantage described in 16-page booklet from Hinde & Dauch. (F-39)

Gravure printing—Illustrated 12-page booklet describes plant facilities, gives examples of products. Chambers-Storck Co. (F-40)

Triacetate processing—Technical bulletin TD-13A describes 10 new slashing formulas for triacetate fiber, plus information on warping, weaving, and quilling. Celanese Corp., Textile Sales Dept. (F-41)

Financing plan—Pay-as-you-depreciate plan described in folder from Supreme Knitting Machine Co., Inc. (F-42)

Automatic transmission—For fork-lift trucks, features creep control, automatic adjustment to changes in motor load. Folder on request from Towmotor Corp. (F-43)



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the logical source for textile chemicals

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for example . . .

A powerful solvent basic to the manufacture of cellulose acetate fibers. A constituent of fabric coatings. A wool degreaser. These textile applications soak up tons of Acetone each year. Celanese, one of the largest manufacturers of textile chemicals, produces Acetone by controlled oxidation of petroleum hydrocarbons. Our complete shipping service from terminals and distribution points assures you of prompt Acetone delivery anywhere . . . anytime you need it.

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Celanese®

Celanese CHEMICALS

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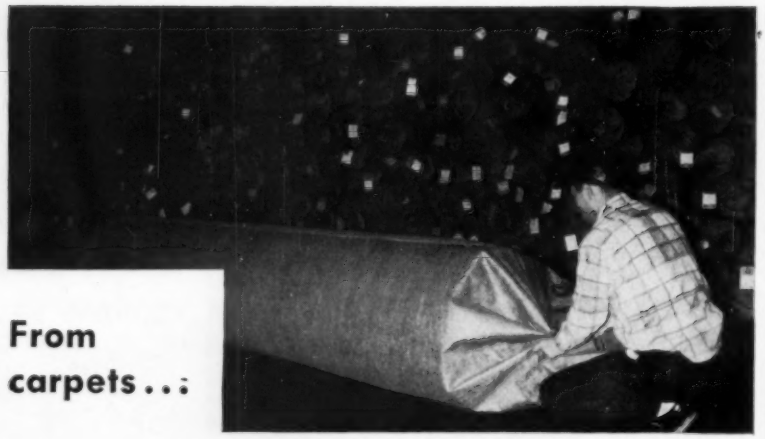
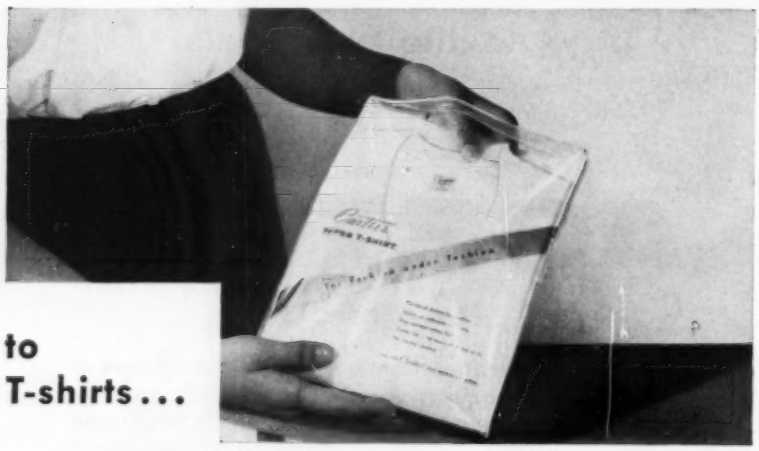


From carpets . . .



to T-shirts . . .

Bemis is the textile industry's top source of packing and packaging

Whatever your needs . . . sturdy waterproof bale and roll covers* and bale caps*—burlap Tite-Fit Tubing*—paper covers* for textile rolls—burlap piece goods . . . and now, Flip-Close* and other fast-selling polyethylene packages . . . Bemis is your top, dependable source.

Ask for the *full* story about the help Bemis can give you.

*Bemis *developed* these.
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NEW LITERATURE Continued

Industrial trucks—Fork-lift, straddle- and crane-type, gas powered, pneumatic tires in wide series of capacities. Form 1480. Hyster Co. (F-44)

Triacetate-yarn processing — From carding through coning described in technical bulletin TD-14a from Celanese Corp., Textile Sales Dept. (F-45)

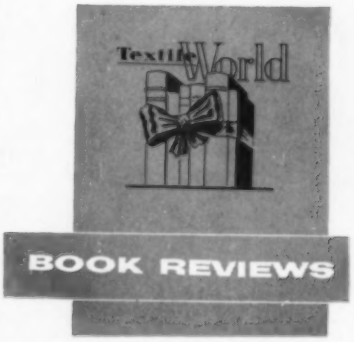
Decorative printing—For shipping containers. Multicolor effects produced on corrugated-paper boxes for promotional purposes. Folders from Jas. H. Matthews & Co. (F-46)

Electric truck—Walking models of compact design; low silhouette, use auto batteries to handle up to 4,000 lbs. Raymond Corp. (F-47)

Adjustable shelving—Steel units with series of slots to support shelves at any desired level. Separators provide small bins in shelves. Folder 708. Frick-Gallagher Mfg. Co. (F-48)

Noise protection—For industrial workers. Description of noise, effects, means of combatting to avoid compensation claims. Mine Safety Appliances Co. (F-49)

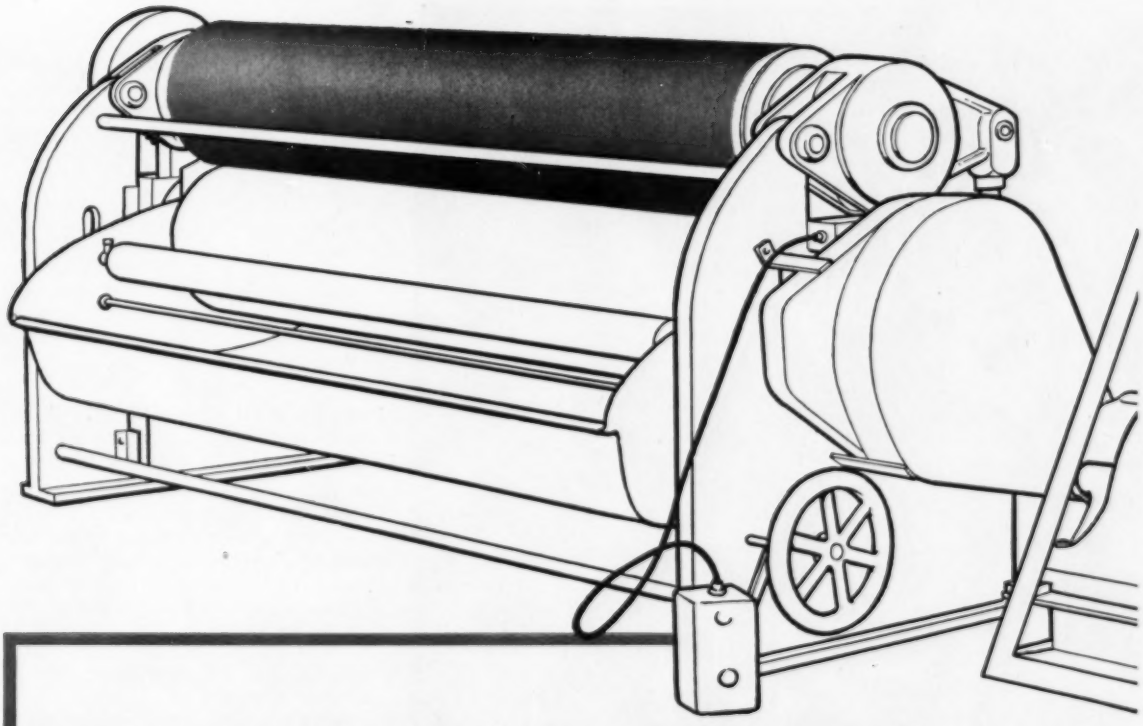
Industrial data sheets—Safety facts on handling materials, guarding machines, training employees. 220 subjects. National Safety Council. (F-50)



NEW CHALLENGES FOR AMERICAN BUSINESS LEADERSHIP, by Leo M. Cherne, Research Institute of America, Inc., New York, N. Y. Published by Research Div., California Personnel Management Association; 9 pages, $1.

This booklet is a brief of an address given before the California Personnel Management Assn. and the Personnel Section of the Western Management Assn.

Mr. Cherne is rightfully alarmed at the over-all implications of the age of automation. He points out that we are not equipped educationally and are not psychologically conditioned to live in an age where machines with



Up to 50% Savings Estimated with this "job engineered" DAYCO FINISHING ROLL

Estimated costs of roll grinding and change-over were more than cut in half on one operation in a southern finishing mill because of a "job engineered" Dayco Finishing Roll.

A squeeze roll running in conjunction with a stainless steel roll on a starch mangle revolved in a hot, oil-soluble starch solution. Rolls previously used in this operation had to be ground on an average of four times a year due to starch adherence to the roll surface.

Then a Dayco Finishing Roll was installed. Designed and built by Dayton's skilled roll technicians, it was specially compounded to work in the heat, the specific oil and starch used in *this* operation . . . in *this* mill.

That's Dayco "job engineering"—building a particular roll for a particular operation. And *every* Dayco Roll is "job-engineered."

In the fourteen months since this Dayco Finishing Roll was installed, performance, in terms of uniform starching, has been equal or superior to previous rolls. Most important, Dayco Rolls were reground *only twice*. Savings on roll regrinding and change-over were estimated at 50%.

For complete details on "job engineered" Dayco Finishing Rolls clip and send coupon.

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Dayton Rubber 51 YEARS OF PROGRESS

DAYCO ROLLERS . . . For Offset, Letterpress, Newspaper, Gravure, Analin, Coating, Graining, Steel Mills, Textile Mills, DAYCO OFFSET BLANKETS, DAYCO FOUNTAIN DIVIDERS, DAYCO COLOR SEPARATORS.

DAYTON RUBBER CO., Holfast Div.
1486 Lakewood Ave., Atlanta, Ga.

Gentlemen:

Please rush me "All the money-saving facts about the New Dayco Finishing Roll".

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minds displace human judgment in a multitude of manufacturing operations.

The author pictures present-day management as a sort of midwife, a helping hand in the transition from the old machine age to an age of six-hour, four-day weeks technologically too complex for most of today's leaders to comprehend. The younger generation, trained in both the sciences and arts, may have the answer to the overwhelming problems of management brought about by this strange new world. Mr. Cherne is cautiously optimistic about it.

MANAGEMENT FOR TOMORROW; Chilton Co., Philadelphia, Pa.; 195 pages, $6.

This volume contains the proceedings of the Eighth Annual Conference of the Philadelphia Chapter of the Society for Advancement of Management. The complex problems of management are aired in addresses by managing executives on subjects that include general administration, production, distribution, finance, and industrial relations.

Incentive plans and current management and labor problems provide interesting reading.

DETERMINATION OF ORGANIC COMPOUNDS, by H. G. Stone; McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 36, N. Y.; 233 pages, $5.

This textbook approaches organic-compound analysis on the basis of functional groups rather than individual atoms. Both gravimetric and volumetric methods are used to produce qualitative indications. Methods of analyzing macro- and semimicro-sized samples are given.

Chapters conclude with problems and questions designed to correlate ideas and information presented to the student.

PERSONNEL ADMINISTRATION, by Paul Pigors and Charles Myers; McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 36, N. Y.; 711 pages, $6.

This third edition of a work by Professors Pigors and Myers is divided into two parts. Part I covers the entire range of personnel activities. Part II is devoted to case studies, with considerable case material to illustrate the application of correct principles in personnel administration.

People now engaged in personnel work and students who expect to work in this field will find valuable information in this book.

Tennant shows 127-year-old EXETER MANUFACTURING CO.

how to make floors TWICE as bright—at ½ the cost

Here, in America's oldest cotton mill (in continuous use since 1827), the TENNANT System works its modern magic on the famous floors in Exeter, N.H.

You see the results above. The *tennantized* area (right) is easily twice as bright as before. Yet mills tell us it costs about 50% less to get such results *today* than it did just 5 years ago.

Here's why. Improved Tennant techniques now make floors far brighter, more dirt-resistant. Result: you save 40% to 60% in manhours, buff only 1/5 to 1/10 as often as before, and get 4 times longer average life from newly developed floor seals.

Write today; ask for estimate of NEW savings now possible in your mill.

VERY LITTLE BUFFING is needed today to keep Exeter's historic floors bright. Mill was built shortly after War of 1812.

TENNANT
ESTABLISHED 1870

G. H. TENNANT CO.
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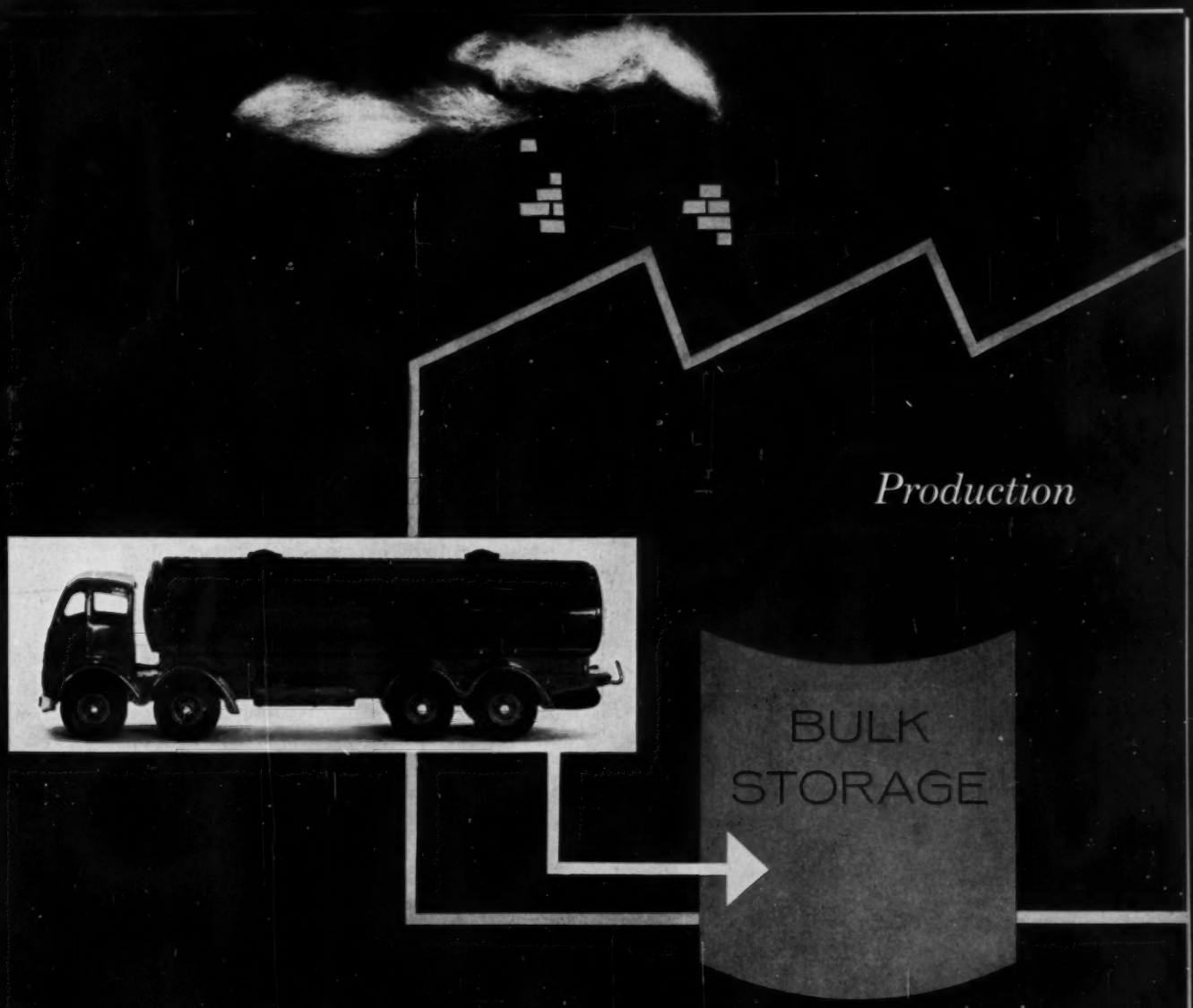
FLOOR MAINTENANCE SYSTEM



Cut your finishing costs . . . buy Resloom* resins in BULK

Adapt your receiving system to profit from the economy and convenience of bulk deliveries

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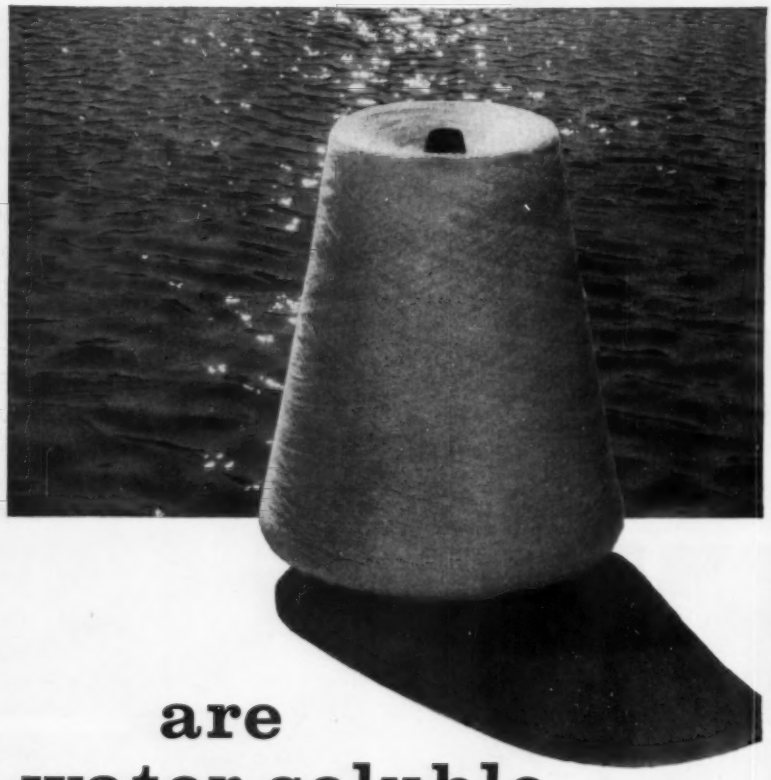
*RESLOOM: REG. U. S. PAT. OFF.

There are two ways you can take advantage of the lower, bulk prices of Resloom finishing resins. One is to install a permanent tank storage installation. The other way is through a temporary receiving system – you buy in bulk and drum the material right at your own plant as you need it. Any installation expense can soon be offset by the sharp difference in material costs.

Many finishing plants are saving this way—and profiting from another Monsanto bulk convenience: finishing resin and catalyst delivered in one combination truck or tankcar-load—at bulk prices for each!

This Monsanto special textile service is part of a program which includes extensive—and productive—research in creating new finishing resins to meet the challenge of the many new fabrics and blends. Draw on Monsanto textile service. Write to Monsanto Chemical Company, Plastics Division, Room 1053, Springfield 2, Massachusetts.

UCON
BRAND
textile lubricants



are water-soluble

That's right! Just stir UCON water-soluble textile lubricants into cold water and they're ready to use on . . .

● **woolens** ● **wool-synthetic blends** ● **synthetic fibers**

Then, when their work is done, they can be removed with a water rinse.

UCON textile lubricants

- *Proved in years of mill use and regular production.*
- *Do not cause dye resists.*
- *Control friction between fibers.*
- *Do not become rancid.*
- *Minimize static.*
- *Do not interfere with carbonizing.*
- *Are effective at only 1 to 3 per cent on fiber weight.*

Write *today* for complete information on UCON textile lubricants.

CARBIDE AND CARBON CHEMICALS

CARBIDE AND CARBON CHEMICALS COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, New York

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NEWS BRIEFS

CONTINUED FROM PAGE 8

for machine-picked cotton, and cotton fiber densities.

A textile school may be established in Turkey as the result of a visit to that country by Malcolm E. Campbell, dean of the School of Textiles, North Carolina State College. Dean Campbell recently made an extensive study of textile-manufacturing potentialities for the Turkish government, which included the possibility of establishing a textile school at Izmir.

Cotton has recaptured a 10,000-bale-a-year market for convertible-auto tops. In 1950, automobile manufacturers expressed dissatisfaction with duck fabrics then being used; so they threw the field wide open to synthetic fabrics. By 1954, 40% of all convertible-car tops were made of synthetics. But the synthetics were not satisfactory, either; so the car producers switched back this year to vinyl-coated fabrics that are colorfast and durable.

Another Jap textile mill is planned for Brazil. The plant, to be built in the Sao Paulo area by Kanebo Co., will make and process cotton goods.

New safety code for the textile industry has been proposed and awaits ratification by the American Standards Assn. The new code, a revision of the safety rules that have been in effect since 1947, is based on studies made in textile installations in Rhode Island.

POINTERS

CONTINUED FROM PAGE 137

in the other ways characteristic of good supervisors, the leadership climate in the department must be such as to permit these ways of acting. If the foreman is not considerate, his assistant foremen are not likely to be either, no matter how many training courses they enroll in. This same point can be carried on up the line.

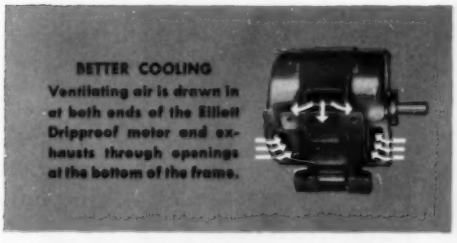
There are other difficulties attending the problem of putting ideas and skills developed in training into action on the job. But this difficulty of "climate" is a major one. We're beginning to see what a supervisor should be. To develop this type of supervisor, we've got to broaden the scope of our training and somehow develop techniques to modify the leadership climate up and down the line.

Inside and Outside . . . entirely new

DRIPPROOF TYPE FRAMES 182-326U

the NEW Elliott C-W Dripproof Motor

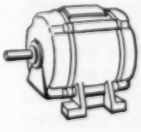
BALANCED DESIGN assures dependable performance


BETTER COOLING
Ventilating air is drawn in at both ends of the Elliott Dripproof motor and exhausts through openings at the bottom of the frame.

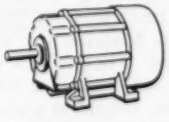
The *balanced* design of the new Elliott C-W type N motors provides the *best* in mechanical protection, the *best* in insulation, the *best* in bearings, the *best* in rigid construction. These motors produce more horsepower per pound, require less space, less maintenance, have longer service life. Every rotor is dynamically balanced. Rigid cast frames assure correct alignment, resist corrosion and mechanical abuse. Highly effective cooling eliminates troublesome hot spots.

The design illustrated above is dripproof—and virtually splash-proof as well. Yet ingenious design has provided ample passages for cooling air. Other types of enclosures providing even greater protection are available for service where conditions are extremely severe.

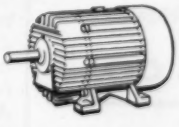
OTHER C-W TYPE N MOTOR ENCLOSURES



Totally-enclosed non-ventilated



Totally-enclosed, fan-cooled Frames 256 U and smaller



Totally-enclosed, fan-cooled Frames 284U-326U

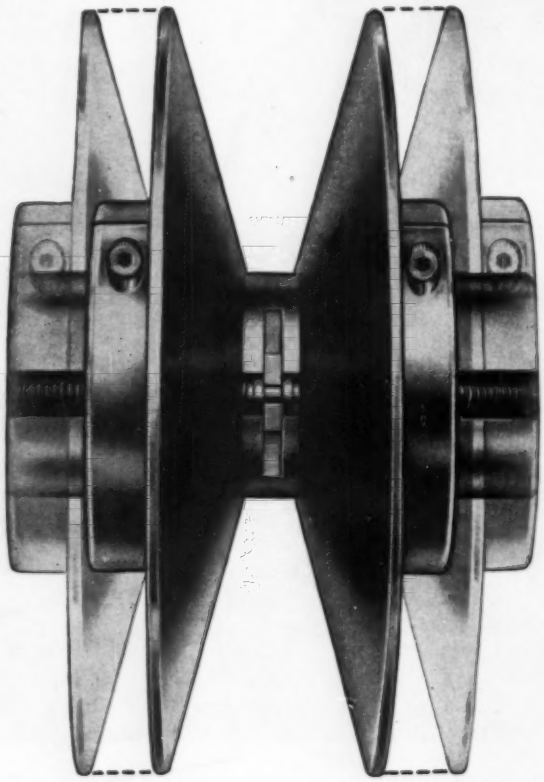
ELLIOTT Company

CROCKER-WHEELER DIVISION

For complete details, send for new booklet. *WRITE* Elliott Company, Crocker-Wheeler Division, Jeannette, Pa.

W6-5

how to change spinning frame speeds



U. S. Patent No. 2753723

the simple, low cost way

Wood's offers the simplest variable speed sheave on the market today! So easy to change speeds. Simply turn the single adjusting screw from either side to change pitch diameter. With the speed chart furnished you can adjust the sheave to the desired speed without trial and error. Simplified design provides positive clamping of the two adjustable flanges . . . eliminates fretting corrosion. Single wide range belt gives maximum HP efficiency. Does away with the problem of maintaining matched belts and matched grooves. (Maintenance costs go down because no periodic lubrication is necessary for the drive.)

If you are interested in lowering costs, ask for complete information on the most talked about drive in the Spin-Weave Industry, write for Bulletin #497 and the name of your nearest Wood's distributor. No obligation.

T. B. WOOD'S SONS CO.

CHAMBERSBURG, PA.

CAMBRIDGE, MASS. • NEWARK, N.J. • DALLAS, TEXAS • CLEVELAND, O.

WOOL MOVES SOUTH

CONTINUED FROM PAGE 91

down the growth is the desire of communities and states to keep industries as diversified as possible. When the growth of wool processing reaches a concentrated level, new mills will no longer be welcomed as warmly as their predecessors. Some states—Georgia, for example—have preferred other types of plants to new textile mills ever since World War II.

The wage differential between the Northeast and Southeast has been narrowing for the last 10 years. The differential between Northern and Southern worsted workers' wages has been cut in half during this time. The gap may continue to narrow as mills continue to increase in the South.

Other cost factors will also go up as the area becomes more heavily industralized. Taxes will rise to meet the demand for extra services, and more fringe benefits will be necessary to meet the increased demands of labor.

However, most of these drawbacks are long-range. Some of them may be a decade or two away. Unless the trend of late years is sharply changed, the lion's share of the woolen and worsted mills in the country will already be in the South before these drawbacks are seriously felt.

SLASHING EQUIPMENT

CONTINUED FROM PAGE 99

gallons needed. Another indicating meter over the storage kettles shows the amount of size in the storage tank at all times so that more can be mixed before it runs out.

Slurry in the storage tank is held over the week end; as long as the pump keeps the slurry agitated, there is no settling out or bacteria spoilage.

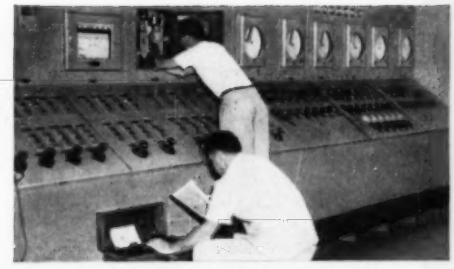
The cooking and storage kettles and homogenizer are cleaned each week end. The size is run out before the week-end shutdown. Then water and a chemical compound are circulated through the system to clean it.

The cooking and storage kettles are stainless steel. All piping for size handling is 2-in. brass pipe.

Two Slashers Replace Four

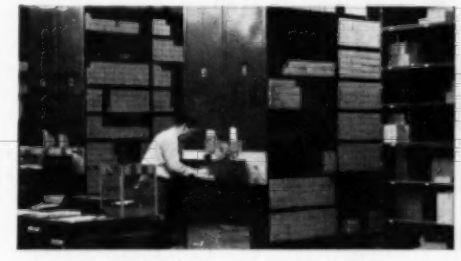
At the same time the starch-making and handling system was installed, two new two-head West Point Foundry & Machine Co. slashers were installed. The two new slashers replaced four old slashers; a fifth old two-head slasher is held as a stand-by and operates approximately 12 hrs. each day.

The new slashers have nine 30-in. cylinders. The first three cylinders



Maintenance engineering

You can arrange to have a Honeywell service engineer visit your plant at regular intervals to inspect, clean, and adjust your instruments and controls. He's factory-trained and field-experienced in keeping good instruments in top operating condition. If an emergency should arise, a phone call will bring a Honeywell service engineer to your plant in a hurry.



Spare parts, in a rush

A Honeywell branch office near you can be your storeroom for standard parts . . . in addition, the Parts Depot in Philadelphia carries a complete stock of all normally needed parts. With Honeywell stocking your spare parts, you save storage and inventory control costs. Most shipments are made within 24 hours after orders are received.

Application engineering

Experienced Honeywell application engineers know your industry and processes. They design *complete* systems of instrumentation, reducing the work of your own engineering staff. From the broad Honeywell line, they recommend instruments that are exactly right for the job. And because Honeywell supplies all types of instruments, recommendations are made without bias. Service engineers will, if needed, help with installation and startup of your system.

Service is the big extra you get with Honeywell instrumentation

Practical service training

The tuition-free Honeywell Training School teaches your instrument technicians the most up-to-date maintenance methods, fits them for the kind of problems they may encounter on the job. Intensive courses range from two to fourteen weeks.

Honeywell offers you far more than instruments. You get service whenever and wherever you need it . . . service that begins when you first decide you need instruments, and continues long after they're installed. This service is always conveniently close at hand, for there are more than 110 Honeywell sales and service centers located strategically throughout the U. S. and Canada.

Prompt, competent service by nearby field specialists is an important plus-value of Honeywell instrumentation. Your local Honeywell sales engineer has all the facts on this service as it relates to your instrumentation needs. Give him a call . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, Wayne and Windrim Avenues, Philadelphia 44, Pa.—in Canada, Toronto 17, Ontario.

MINNEAPOLIS **Honeywell**

BROWN INSTRUMENTS

First in Controls

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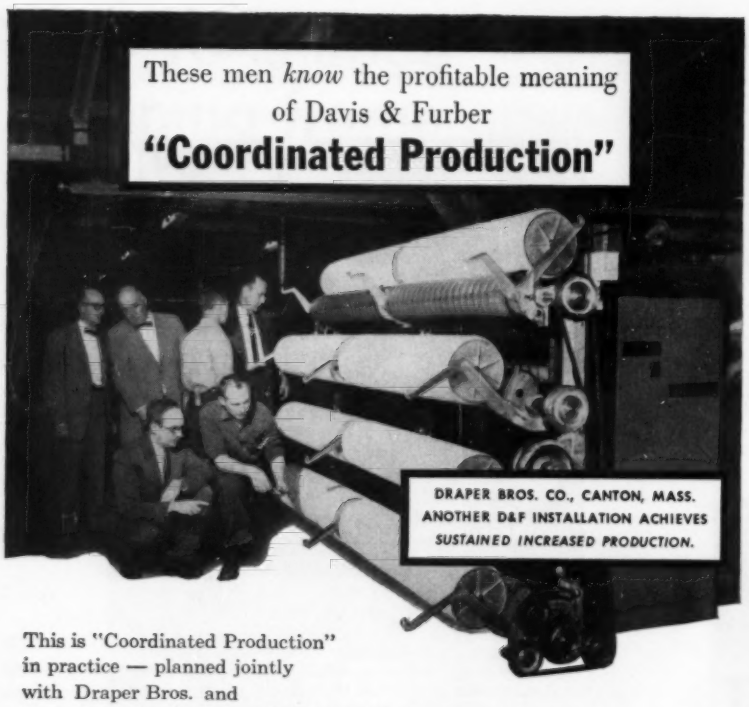

These men *know* the profitable meaning
of Davis & Furber
"Coordinated Production"
DRAPER BROS. CO., CANTON, MASS.
ANOTHER D&F INSTALLATION ACHIEVES
SUSTAINED INCREASED PRODUCTION.

This is "Coordinated Production" in practice — planned jointly with Draper Bros. and Davis & Furber — executed and carried through in *all phases* by D&F as *one* qualified, responsible source. Working closely with the customer, through their Technical Service and Counsel, here's how Davis & Furber can do the same for you.

The FIRST part of D&F's established plan to increase your mill production is an "in-the-mill" survey with recommendations by D&F service technicians. They know mill operation from nationwide experience . . . and they know best what D&F equipment can do.

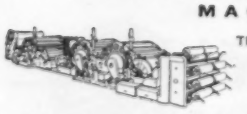
The SECOND step toward "Coordinated Production" is the special adaptation, when necessary, of new equipment to your specific requirements by D&F design engineers, or the modernizing of existing equipment to meet present needs.

The THIRD point is the use of D&F trained erectors and technicians to install, adjust, and set up actual production runs on D&F equipment, with follow-up to assure peak performance and production.

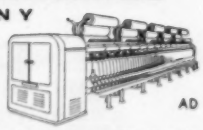
Davis & Furber and Draper operators and management, working hand-in-hand, have fulfilled the promises of D&F "Coordinated Production" in this woolen mill. Its features have benefited others. Check and see how they can benefit you. Call Davis & Furber now for complete details, at either North Andover, Mass., or Charlotte, N. C.

Helpful facts for mill managers, superintendents, overseers. Monthly D&F NEWS — copies on request.

DAVIS & FURBER
MACHINE COMPANY



TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS
North Andover, Mass.
Charlotte, North Carolina



AD 11-6

CARDS • SPINNING FRAMES • PREPARATORY MACHINERY • WARP DRESSING MACHINERY • FINISHING MACHINERY
MACHINERY MODERNIZATION • ACCESSORIES, SUPPLIES, CARD & NAPPER CLOTHING, GARNET WIRE, TAPES & APRONS
SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

next to the size box are covered with Teflon; the other six cylinders are plain stainless steel.

The temperature of the cylinders is controlled in groups of three. On light sets—1,700 ends on a cloth construction of 44x36, for example—the temperature of the cylinders is 240, 235, and 220, beginning at the size box.

On heavy sets, 3,196 ends, 56x52, the temperature of the cylinders is 240, 250, and 250.

Size is held in the size box at 202 to 204° F.

Section beams are 36 ins. in diameter, and 60,000-yd. sets are run. Tobacco cloth from 8x8 to 56x52 is woven. Warp yarns are 30s to 40s; filling is 35s to 40s. An average of 45 styles of cloth are woven all the time. Warps are slashed for 1,164 looms, and 1½ million yds. of warp are slashed every 120-hr. work week.

Sets are changed at the slasher in from 1 hr. 25 mins. to 2 hrs.

Rubber-covered squeeze rolls are used on both West Point slashers. Rubber is used on both the front and back rolls. The rolls are buffed about every six months. The density of the rolls is 45 to 55. An indicator is used to check the density periodically; when it drops down to 30, the rolls are buffed.

Magnetic-Amplifier Drives

The new slashers have Westinghouse magnetic-amplifier drives. During the two years of operation, the drives have required little maintenance.

Yarn stretch is held at less than 2%. On light styles, 3% moisture is left in the warps; on the heaviest sets, 8½ to 9% is left. At present, the slashers do not have moisture controls; the cylinder temperatures for the different style constructions result in a fairly accurate moisture range. But moisture controls will be added.

Both heads of the slashers are run on sets up to 3,100 ends; on sets over 3,100 ends, only one head is run. A construction of 56x52 with 3,196 ends, for example, is run on only a single head. Loom yarn-beam heads are 20 and 22 ins. in diameter.

Run at 95 Yds. Per Min.

The new slashers run at 75 to 95 yds. per min. on double heads. The speed of the replaced slashers was only 45 to 55 yds. per min.

The old two-head slasher still in production is run 50 to 55 yds. per min. and is used only on light styles.

The five old slashers ran three shifts six days a week. The two new ones operate three shifts five days a week. In addition, the old two-head slasher

CONTINUED ON PAGE 188

what have

HYATTS

to do with

all this?

Fine Fabrics Depend on *Critical Settings!*

The glamorous gown Milady wears so proudly at the Pump Room owes much of its beauty to the fabric from which it's fashioned. And the fabric owes much of its elegance to HYATT Hy-Roll Bearings!

From carding right through to finishing, precision-built HYATTS play a vital part in guarding textile quality. Wherever critical settings are a "must", HYATTS maintain them far more accurately than fast-wearing plain bearings with excessive internal clearance which allow too much play.

Even where fabric perfection is not required, HYATTS are a wise investment. They save up to 40% on power, up to 98% on lubrication, eliminate cloth damage from spattered oil, and sharply reduce maintenance costs. Be sure to specify HYATT Hy-Roll Bearings when you modernize or replace *any* of your equipment. Hyatt Bearings Division of General Motors, Harrison, New Jersey.

Watch "WIDE WIDE WORLD"
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GM
GENERAL MOTORS

HYATT HY-ROLL BEARINGS
FOR TEXTILE INDUSTRY

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with

Fairbanks

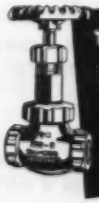
STEEL-FRAMED PLATFORM TRUCKS

Load 'em high . . . treat 'em rough. Fairbanks steel-framed trucks bounce back for more. Tough select oak platforms, bolted to sturdy steel frame mounted on Fairbanks **LOCKWELD** Steel Double Ball Race Swivel Casters — — give you low cost, dependable service mile after mile, year after year.

"Lockweld" Steel Swivel Casters — Single and Double Ball Race — the Casters Without A King-Pin!

Vulcanized Rubber-Tired Wheels — for long trouble-free service and easier movement under comparative load conditions. Give you greater floor protection, too.

Fairbanks Steel-framed hand trucks . . . a type for every purpose . . . in every industry.



THE **Fairbanks** COMPANY

393 LAFAYETTE STREET • NEW YORK 3, N.Y.

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operates 1½ shifts each day.

With the old slashers, there were a foreman and three operaftors on each shift. Now, there are a foreman and three operators for 1½ shifts; for the other 1½ shifts, a foreman and only two operators are employed. The foreman handles all phases of size making.

At a glance, this labor saving does not look great, but it really amounts to a large saving: 60 manhours of regular time each week; and 64 manhours of Saturday work at time and a half for a total of 96 manhours of pay. So the over-all total savings each week is 156 manhours of pay.

Since Kendall finishes its own cloth, management men try to add as little size as possible to the warps, consistent with good weaving conditions, to prevent washing out excessive size in finishing.

Have Many Advantages

J. A. Chasteen, overseer of weaving, has this to say about slashing warps with the new equipment: "We have better control of size throughout its preparation. Homogenization and the slurry tank give us more-uniformly mixed size. And our slashers, present slasher speed, and rubber-covered squeeze rolls give proper size penetration and pickup. Therefore we've been able to reduce the amount of size in our warps 22%.

"Weave-room efficiency has not been reduced with the reduction in size. Our present production is 92%; seconds average 4.5%.

"We don't have air conditioning in the weave room; but when the weather lets us control the temperature, we keep the weave room at 82 to 84° F. and the relative humidity at 85%. When the temperature rises, we increase the relative humidity accordingly. Our slashed warps run well with these humidity conditions."

SET KNITTING MACHINES

CONTINUED FROM PAGE 101

chine is given a ravel test. This job is done by the standards-department men on a long table.

The fabric is cut at an angle to the courses, and unraveling is started from the peak of the cut. The cloth is unraveled until one complete course is pulled out.

A cut, with scissors, is made down one wale. The length of cut depends on the number of feeds on the knitting machine. Fabric from a 64-feed machine is cut 64 courses.

One course is removed at a time and measured on a scale on the front of the table. The length of each course is entered on a form as the

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the
KIDDE-JOHNSON
WARP SIZER

Precise control of size temperature, drying heats, speeds and stretch. Super-press quetsch provides uniform moisture extraction. Visual stretch indicator reveals degree of stretch as warp passes through. Adjustable width beam carriages. Stainless steel size box, immersion, quetsch and idler rolls, and cylinders. Available with 7, 9, 11 or more cylinders for either silk or cotton system warping or combinations of both.

Do your slashers meet these 5 tests?

1. Do they give you warps on which the amount of size is even from one end to the other and uniformly dried so that there is no trace of streaks?

2. Do they give you visual, fingertip control of stretch so that you can get uniform stretch through the entire warp or a whole series of warps?

3. Do they give you hard, smooth loom beams that do not make trouble for the weave room nor reduce loom efficiency?

4. Do they perfectly size any fiber you want to put through them, cotton or synthetic, spun or filament?

5. Do they run without breakdowns, 24 hours a day, turning out a steady stream of all the warps your weaving department needs?

If they do . . . *then they must be KIDDE-Johnsons!* If not, write us today for complete details of this world-famous warp sizer.

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS
BEAMERS • CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS

Kidde

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GOOD WEAVING REQUIRES A GOOD BASE

Westsorb®

Westsorb adhesive-coated felt mounts absorb vibration, reduce noise, prolong machine life and eliminate floor damage. Mill owners, large and small, report savings of many times their original cost.

Adhesive is pre-applied to both sides. Peel off protective backing and Westsorb pad is ready to use (no cement necessary). Will not SLIP. NO BOLTS needed.

WESTSORB AVAILABLE AND IN STOCK AT:
Schmidt Manufacturing Co., New Bedford, Mass.
American Supply Co., Central Falls, R. I.
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Schmidt Mfg. Co. of S.C., Greenville, S.C.
Industrial Suppliers, Inc., LaGrange, Ga.

● Write today for free Westsorb sample and descriptive folder.

WESTERN Felt WORKS

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MANUFACTURERS AND CUTTERS OF WOOL FELTS

yarn is removed. Fabric from a 64-feed machine is tested in about 15 mins.

The percentage variation is then calculated by subtracting the lowest reading from the highest reading and dividing this figure by the average reading. If the variation is too high, the machine is readjusted.

A ravel test has also been useful to identify rolls of fabric that have lost their tickets. The ravel-test result is compared with the standard, and fewer mistakes are made.

The Speedotex instrument is also used in the knitting room for checking faults on the knitting machine. The instrument is used as a stroboscope while it is pointed at the rapidly moving needles and sinkers.

The adjusting knob on the calibrating unit is turned until the needles appear to remain stationary. Such conditions as faulty timing and worn cams are quickly spotted.

SEAMLESS HOSIERY

CONTINUED FROM PAGE 109

knitting machines with air are connected together so that if one fails, the knitting machines can still run successfully.

Looping of the toes is done on the floor below. Looping machines are arranged alongside the glass-block windows in this section to take full advantage of the light.

Loopers' Eyes Are Shielded

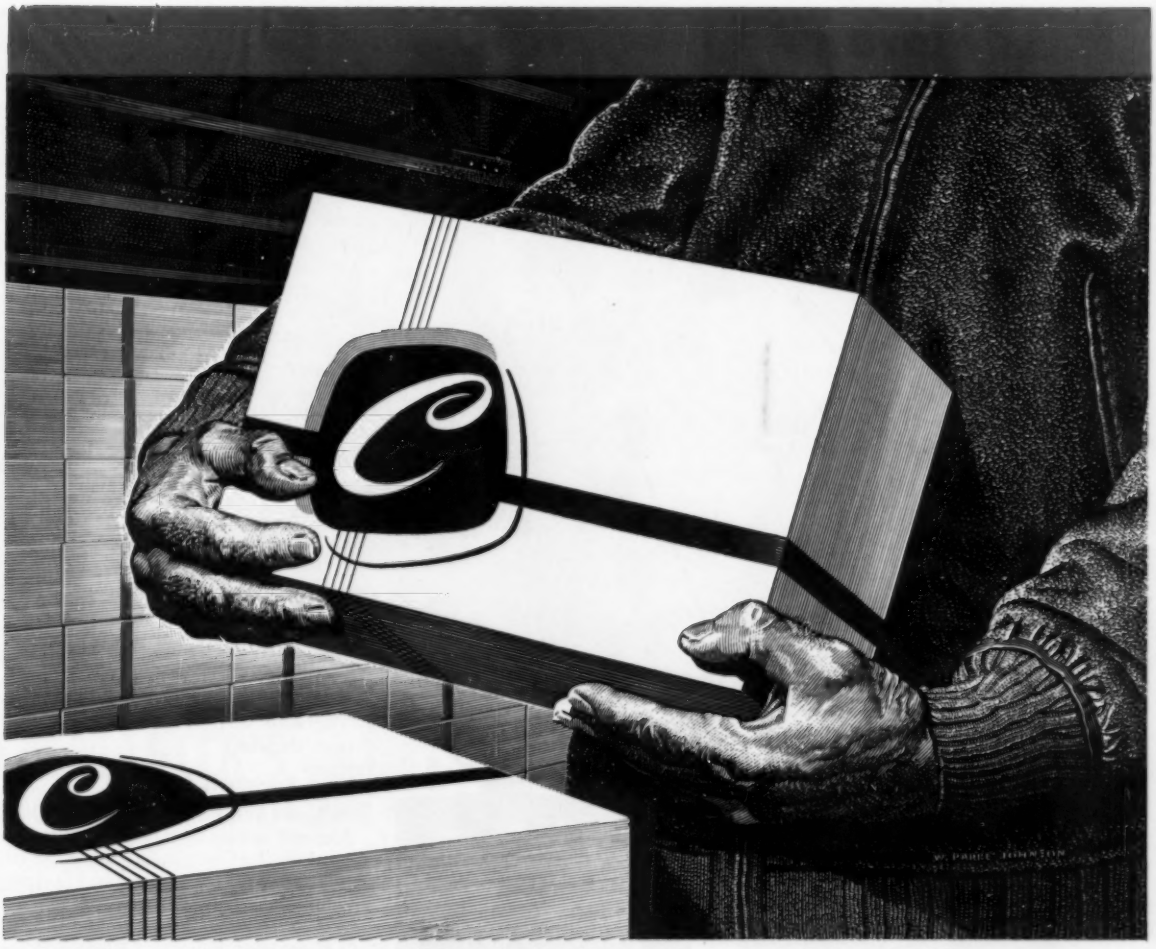
To prevent glare in loopers' eyes, cloth curtains that are dyed brown run on wires above the south and west windows. A plastic material adheres to the clear windows that open to keep out both heat and excessive sunlight.

Stockings from a 474-needle machines are looped on 44-point loopers, while 38-point loopers are used for 400-needle goods. Looper operators tie the stockings in dozen pairs with a tie band and send them in 10-doz. lots to the next operation, which is gray inspecting.

Inspecting, turning, and clipping are done in one operation. The stockings are pulled on the form of an Inspectomatic machine and inspected on all sides.

These machines are close to the loopers, with the operators' backs to the windows. A Ginsberg automatic trimming machine is erected over each inspecting machine. The motor that drives air to the trimmer pivots on a bracket so that the trimmer can cover all parts of the stocking.

CONTINUED ON PAGE 192



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Damage claims can often be reduced without extra cost... simply by improving the appearance of your container. Handsomely printed Gaylord boxes can make your product seem "special"... encourage careful handling by truckers and warehousemen everywhere.

For a box to make your product more impressive... to assure "first-class" handling... call your nearby Gaylord office.

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GAYLORD CONTAINER CORPORATION ★ ST. LOUIS

DIVISION OF CROWN ZELLERBACH CORPORATION

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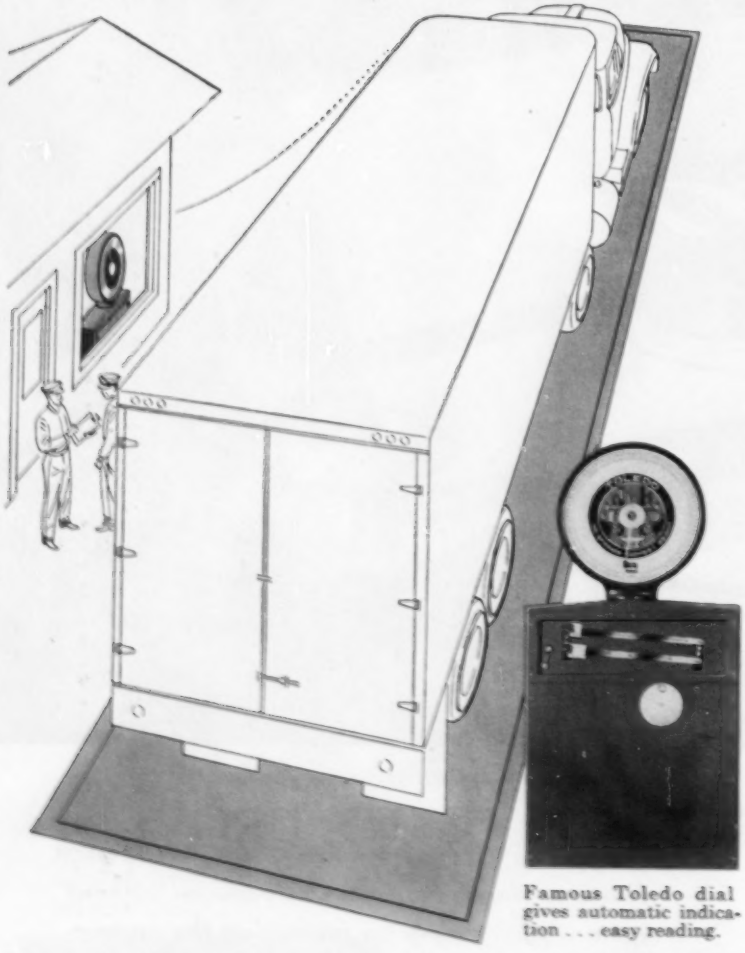
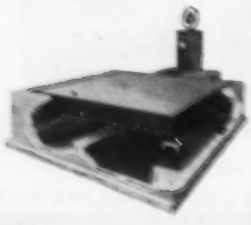
More and more trucks are weighed on TOLEDOS



Famous Toledo dial gives automatic indication . . . easy reading.

Big choice of sizes to 60 ft. . . . rugged dependability . . . automatic indication



HI-WEIGH AXLE LOAD SCALES Check load distribution and axle weight. Thrifty shallow pit installation. 20 ton capacity with 8' x 10' platform or 30 ton with 10' x 16' platform.

Avoid loss of profits and good will, caused by "doubtful" weights. Weigh on Toledo Hi-Weigh Truck Scales and know *your load*. Advanced TOLEDO engineering features integrated lever, weigh-bridge and pit for brute-strength with long-life accuracy. Full range of capacities to 60 tons. Choice of two-section, four-section or axle load scales, all available with TOLEDO PRINTWEIGH that records weights on tickets, strips or sheets. Ask the local Toledo office about them, or send for literature. Request form 2417. Toledo Scale Company, Toledo 1, Ohio.

TOLEDO®

Headquarters for Scales

Loose Ends Are Clipped

Loose ends from the welt, toe, and heel are trimmed off and the clipped threads are drawn through pipes to a box in the lower floor. This mechanical equipment allows each operator to process about 140 doz. stockings per day.

After this operation, the stockings are preboarded and dyed in the mill's own dyehouse and then returned to be paired, final inspected, and boxed in the main part of the mill under the knitting and looping departments.

WOODSIDE CARDING

CONTINUED FROM PAGE 117

present hold 12 lbs. of stock. Tests are being run on 18x42 cans that hold 40 lbs. of stock.

There are 132 deliveries of three-over-four breaker and finisher drawing, six ends up. Both front and back frames run 112 ft. per min. producing a 55-grain sliver with a draft of six. Evenness at the finisher is 15½%. The mill is testing new 300-ft.-per-min. drawing.

New Roving Is Installed

New Whitin 12x6½ Inter-Draft four-roll roving has been installed to produce 1.15-hk. roving on a 55-oz. bobbin. Front-roll speed is 128 rpm; spindle speed is 730 rpm.

The frames are equipped with Adams stop motions. Roving boxes hold 96 bobbins each, or one doff. Overhead cleaners have reduced cleaning substantially in this department.

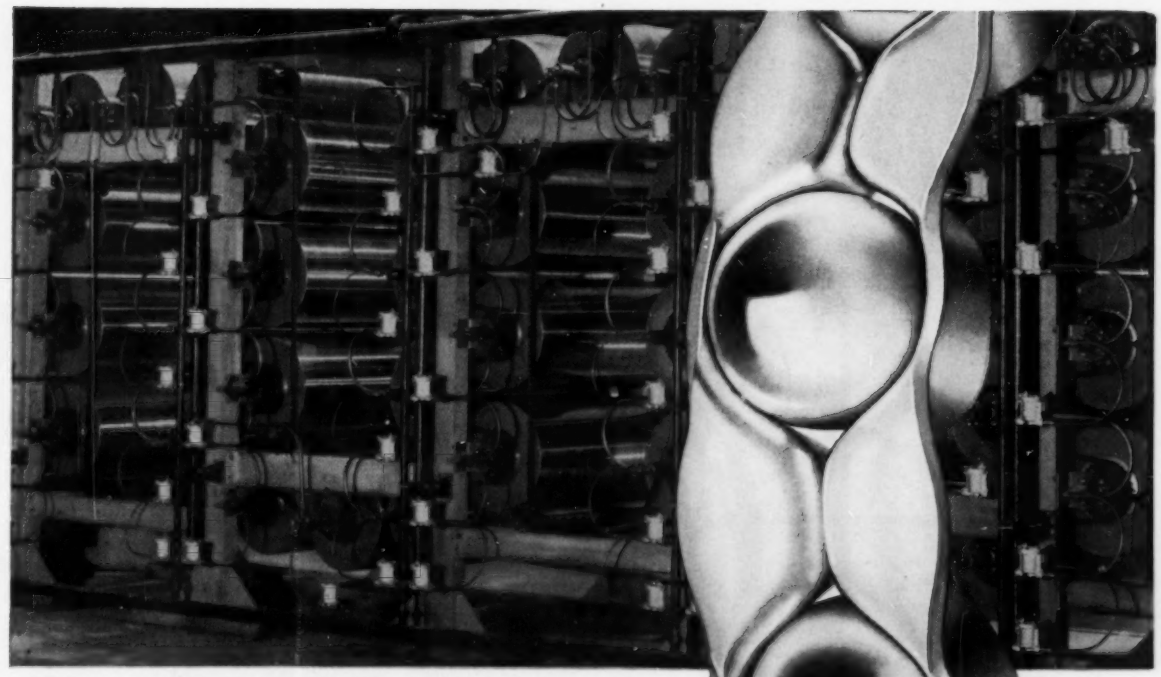
The card room is cooled with refrigerated air supplied by a 535-ton Worthington central air-conditioning system, recently supplemented with a smaller Carrier system to take care of 6,000 sq. ft. of new floor space.

BREAK DOWN REPAIR FIGURES

CONTINUED FROM PAGE 125

weaving canton flannel, the difference may be easily explained. It can be due to the downtime of the flannel looms for repairs to filling-changing mechanism, thread cutters, and stop motions caused by the extra strain and wear of the heavier weave.

Also, the more accessories used, the more breakdowns and repairs. A loom stripped down for the weaving of bag goods can be expected to have less downtime than one equipped with auxiliary camshaft, filling feeler, Stafford thread cutter, and multiple har-



THE ADVANTAGES OF SEALMASTER'S (patented) BALL RETAINER ARE IMPORTANT IN THE TEXTILE FIELD!

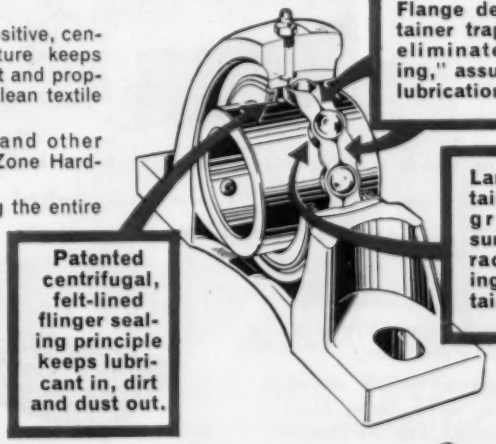
Lint and dust prevalent in textile manufacturing can raise havoc with bearing performance. Grease, on the other hand, utilized in bearing lubrication, has no place on spotless, clean textile fabrics. SEALMASTER engineers have developed an efficient solution to these two problems in SEALMASTER Ball Bearing Units, with the development of a patented Floating Ball Retainer. The feature is designed to confine grease within the ball path section. The retainer floats on the ground inner surface of the outer race, eliminating excessive wear of balls and retainer. Accurate spacing of balls assures effective distribution of radial and thrust loads.

Combined with SEALMASTER'S patented, positive, centrifugal Flinger Sealing principle, this feature keeps SEALMASTER Ball Bearing Units free of dust and properly lubricated for continuous, trouble-free, clean textile production.

You'll want more information on these and other SEALMASTER exclusive features, such as Zone Hardening, Locking Pin & Perimeter Dimple, etc.

Write for your copy of Bulletin 454 containing the entire SEALMASTER quality story today!

Only SEALMASTER offers you these patented features!



Flange design of retainer traps grease—eliminates "churning," assuring proper lubrication of balls.

Land ridden retainer floats on ground inner surface of outer race—minimizing ball and retainer wear.

Patented centrifugal, felt-lined flinger sealing principle keeps lubricant in, dirt and dust out.

SEALMASTER BALL BEARING UNITS

SEALMASTER BEARINGS A DIVISION OF STEPHENS-ADAMSON MFG. CO., 10 RIDGEWAY AVENUE, AURORA, ILLINOIS

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Bright

assure added sales appeal with GLOBE-DYED SYNTHETIC YARNS

Clear

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For fine hand, and superior knitting and weaving qualities, you can rely on Globe package-dyed ORLON — DACRON — NYLON — ACRILAN.

Globe does package dyeing on tubes, skein and warp dyeing and bleaching, warp mercerizing and sizing.

Yarns we process include cotton, rayon, worsted, nylon, linen, blend and novelty yarns. Also Acrilan — Dacron — Orlon.

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nesses for the weaving of twills.

Only by having first-hand data of the actual number of loom stops for repairs, nature of the repairs, and the downtime involved, can a true picture be obtained.

6. How It Is Done

How to obtain accurate loom-repair and downtime figures?

Really accurate figures are impossible and, like many other things involved in textile production, average figures must suffice. A timestudy can be made of a loomfixer making routine repairs, and these timestudies must be average because there is much variation in the speed of individual loomfixers. One may be a whiz at paralleling a picker but slow as molasses in adjusting a thread cutter, while another loomfixer may be just the opposite.

Each loomfixer can keep a record of the repairs he makes and also of the new parts used. Many repairs do not involve the use of new parts, these being settings or adjustments only. For maximum benefit, records should be segregated as to types of fabrics, kind of looms, etc.

From the timestudy and loomfixer reports, a close estimate of the labor cost of repair and maintenance of each loom part and motion can be figured. The cost and service life of each part can be figured for any particular loom on a given fabric after enough data have been accumulated.

In addition to other uses, the figures obtained by a study of repairs made to the looms can be boiled down to pinpoint trouble spots. Any loomfixer, section or type of loom that is above or below average in any way will be shown up. The data can be a useful tool for giving credit where due or for concrete reasons for remedial action.

LOOM CLEANING

CONTINUED FROM PAGE 131

six full-time cleaners would be eliminated.

Without cleaners, drop wires and the area under the looms are blown off with an air hose every 48 hrs. Handrails and harnesses are cleaned every 24 hrs., and filling grates are cleaned every 8 hrs. Looms are cleaned at warp-outs.

With the mechanical cleaner, all manual cleaning except cleaning at warp-outs is eliminated.

Superintendent G. Wendell Morriss likes the cleaner, but he wants to extend the test before he decides to equip more looms with it.

Weave-room Overseer J. Gomer

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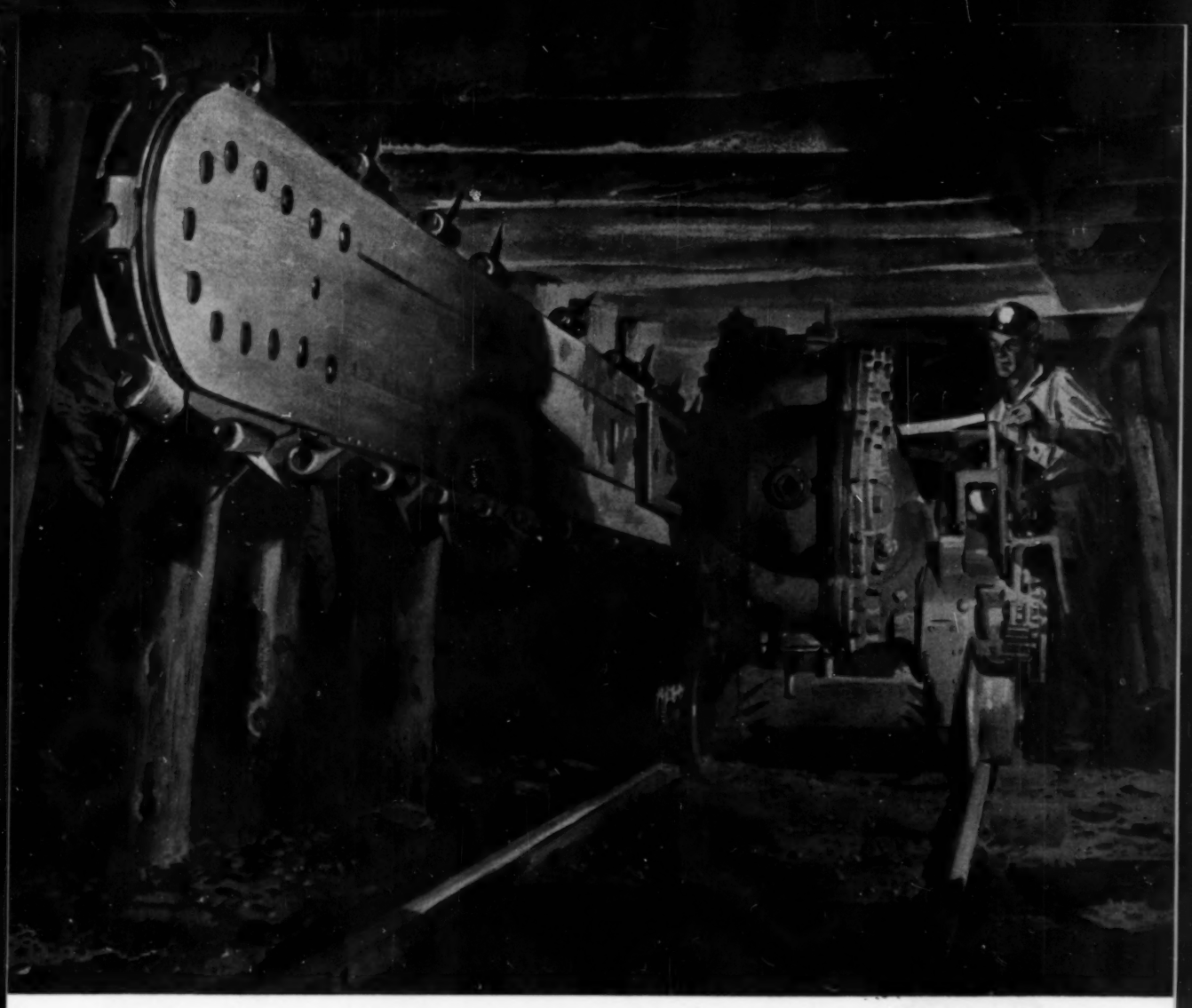

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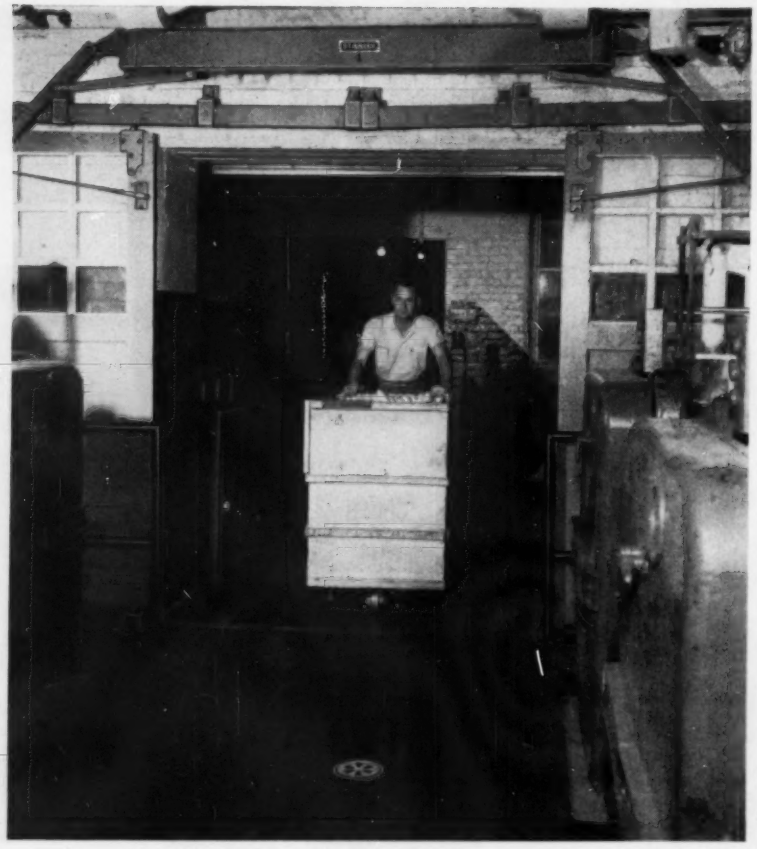


Stanley Magic Eye Control at The Springs Cotton Mills, Lancaster, S. C. Plant... largest weave mill under one roof in the world.

Colonel Elliott Springs Enlists

STANLEY *Magic Door* CONTROLS

to control temperature and humidity . . . and reduce end breakage

Drafts or loss of humidity mean end breakage near the doors, resulting in accumulation of waste, work stoppage, poor quality and lower production. So mill doors must stay open *only the minimum time required to let traffic through.* That's why Colonel Elliott Springs uses 40 Stanley Magic Door Controls in the various plants of his world-famous The Springs Cotton Mills. Reductions in door accidents and door maintenance costs are bonus benefits.

Write for complete information on Stanley Magic Door Controls . . . Magic Eye (photoelectric), Pull Cord and Push Plates.

MAGIC DOOR DIVISION, THE STANLEY WORKS
Dept. J, 1132 Lake St., New Britain, Conn.
Representatives in Principal Cities

Stanley Tools • Stanley Hardware • Stanley Electric Tools • Stanley Steel Strapping • Stanley Steel

Keller also likes the cleaner and thinks he has less lint blown into the warps. In addition, there's less down-time for cleaning. Drop wires stay free of lint between warp-outs.

Weavers and loomfixers aren't sold on the cleaner. Women weavers have to wear hair nets all the time because there's a strong down draft when the cleaner head passes; they don't like the down draft. Loomfixers go along with the weavers in their dislike of the cleaner.

HOW BINDING IS MADE

CONTINUED FROM PAGE 135

are two quillers in the mill, one having 24 heads and the other 12 heads. Each bobbin holds 1,500 yds. of yarn, and with these quillers it is possible to splice the yarn on a quill and get uniform yardage without having waste left on the quill.

There are six Crompton & Knowles narrow-fabric looms in the mill that have 64- and 80-shuttle capacity, and 22 Fletcher looms of 24-, 32-, and 42-shuttle capacity. The C&K looms operate at 160 ppm., and the Fletcher looms have a speed of 210 ppm.

All looms have electric warp stop motions, and a signal light shows which section of the loom has a warp break when the loom stops. The looms also have filling stop motions that are set for a predetermined number of picks. When the set number of picks have been woven, the loom stops and the filling must be replenished before the loom is restarted.

No Humidity System Needed

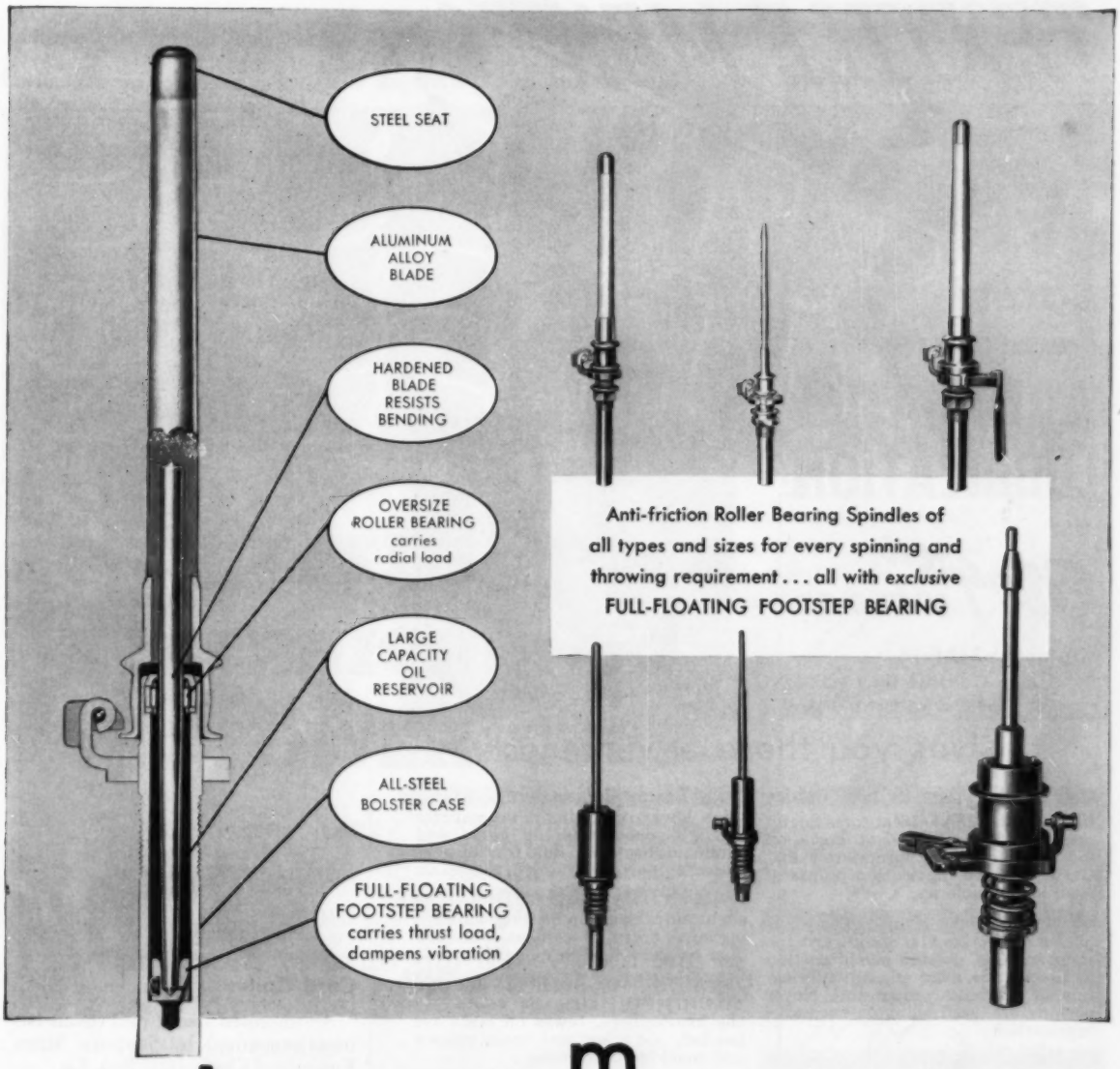
The looms are operating at more than 90% efficiency, and the seconds are less than 2% of total production. Natural atmospheric conditions are adequate for the two-ply cotton and synthetic weaving, and a humidity system is not used.

When the binding comes from the looms, it is inspected and wound in 72-yd. rolls. Ten of the rolls are tied together in a bundle and placed in a shipping carton. Shipment of purchased materials and finished binding is by motor truck.

Mill Has No Labor Problem

The mattress binding woven at Centre is $\frac{3}{4}$ in. wide. Other types of binding produced at the mill are $1\frac{1}{2}$- and $1\frac{3}{8}$-in. cotton binding for chenille rug binding and $\frac{3}{8}$-in. cotton drawstring binding. Used in pajamas and other garments, the drawstring binding is cut in 11-in. lengths and packed 1,000 pieces per bundle.

Asked if he had any labor prob-


STEEL SEAT
ALUMINUM ALLOY BLADE
HARDENED BLADE RESISTS BENDING
OVERSIZE ROLLER BEARING carries radial load
LARGE CAPACITY OIL RESERVOIR
ALL-STEEL BOLSTER CASE
FULL-FLOATING FOOTSTEP BEARING carries thrust load, dampens vibration
Anti-friction Roller Bearing Spindles of all types and sizes for every spinning and throwing requirement . . . all with exclusive FULL-FLOATING FOOTSTEP BEARING

American-made Marquette SPINDLES produce more yarn at lower cost

The above cross-section view of a typical Marquette Spindle explains why millions are in use today . . . producing *more yarn* at *lower cost.* Every part of every spindle is made in America and is scientifically engineered for superior performance and long life.

No other spindle can offer you all three of these important advantages:

Efficient operation at high speeds

Extremely low maintenance cost

Minimum vibration, due to Marquette's exclusive full-floating footstep bearing

Write for Data Sheets on Marquette Anti-friction Bearing Spindles. Or ask for a test installation *in your mill.*

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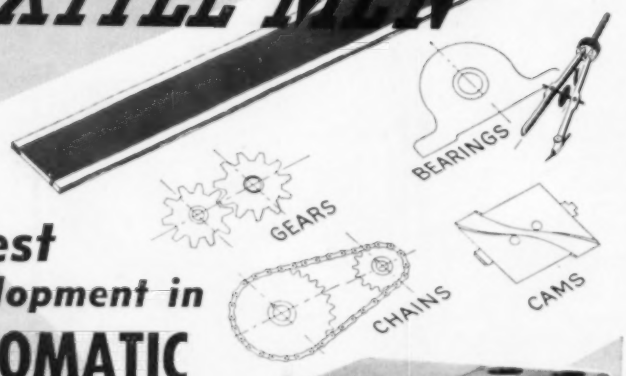
TEXTILE MEN



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Model 33AF-16
Lubro-Control Unit
For 1,000 Bearing Inches or less

Gives you these advantages

Only One Lubricator for 1,000 Bearing Inches—The 33AF-16 automatically creates a finely divided air-borne oil fog which can be appropriately distributed to all lubrication points of even large machines.

Better Lubrication—Continuously applies a protective film of oil—just the right amount, not too much, not too little—for the most efficient lubrication of machine components. Never periods of insufficient or excessive lubrication.

Oil Always Fresh, Clean—No recirculation of deteriorated or contaminated lubricant to increase wear or corrosion.

Big Savings Through Manifolding—MICRO-FOG can be manifolded the extent of any machine, greatly reducing the number of distribution lines or the number of lubricators required.

Eliminates Expensive High Pressure Piping—MICRO-FOG is distributed at pressures in the neighborhood of one p.s.i.

Big Savings in Equipment—Banishes large lubricant reservoirs, pumps, drainage and return lines, and elaborate filters of flood recirculating systems.

Lower Bearing Temperatures—Maintains lower operating temperatures of high speed rotating parts and eliminates heat from fluid friction generated by parts churning in lubricant.

Protection From Coolant and Dust—The slight air pressure in bearing housings prevents entry of coolant, abrasive dust or other foreign material.

Fewer Oil Seals Required—Because MICRO-FOG must be vented to the atmosphere, fewer oil seals are needed, reducing seal maintenance and machine down-time.

Visual Oil Feed—An oil feed dome provides a quick visual indication of proper operation of lubricator.

Automatic Alarm Controls—Switches are provided to actuate an alarm system or controls to warn of conditions affecting proper lubrication.

Space-Saving—Only 12" x 11" x 9" in size, this lubricator contains all necessary controls plus a 2-gallon oil reservoir.

Oil-Saving—With MICRO-FOG, every single particle of oil does a more thorough lubrication job. The 2-gallon reservoir holds enough oil for hours of continuous lubrication.

For complete data on Norgren MICRO-FOG 33AF-16 Lubro Control Unit, call your nearby Norgren Representative listed in your telephone directory—**or WRITE THE FACTORY FOR BULLETIN 531.**

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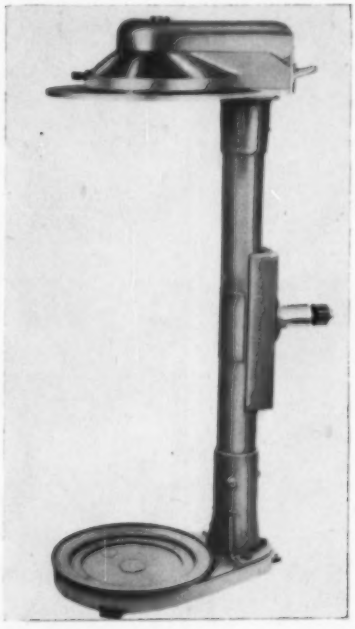
Pioneer and Leader in Oil-Fog Lubrication Since 1930

lems, Mr. Hal Johnson, manager of Va-Do Fabrics, said that labor was the least of his problems.

"All our employees are local people," he continued, "and they are all well satisfied with their jobs. We have hired only one person as a replacement in three years. When we have an opening, we promote within the plant and do on-the-job training."

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 154



Card Coiler

An improved line of card coilers has been announced by Southern States Equipment Corp., Hampton, Ga.

Features include ball-bearing head and base assembly, strong tubular-steel stands, easy mounting on any kind of card, ball bearings on all shafts, and roller-chain table drive.

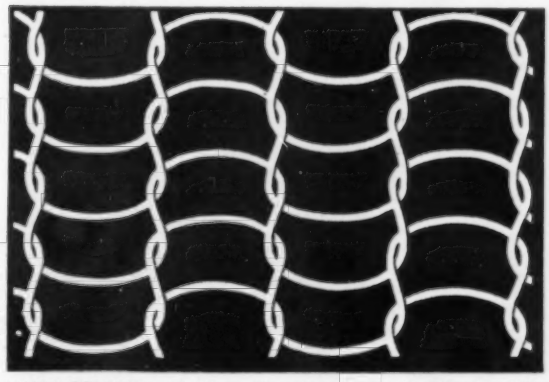
The coilers will accommodate cans of all standard heights and diameters.

Circle T-28 on Reader-Service Card

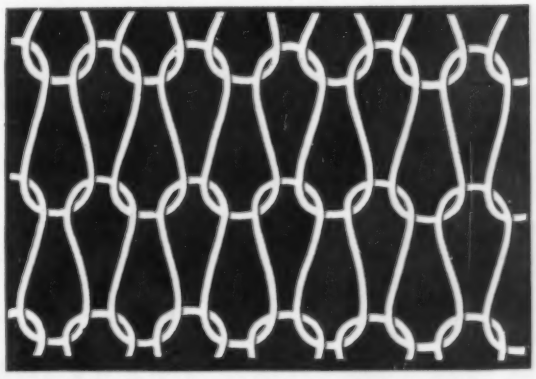
Concrete Roof Deck

A roof-decking material, said to have great fire-resisting qualities, has been announced by Perlite Institute, 45 W. 45th St., New York, N. Y. To build a roof with the material: (1) corrugated steel decking is laid over open-work steel joists, (2) the decking is clipped and welded to the steel joists, (3) wire mesh is laid over the corrugated steel, (4) the Perlite material mixed with concrete is poured

LET IVES HELP . . .



MANY COURSES with few wales gives poor elasticity in width.



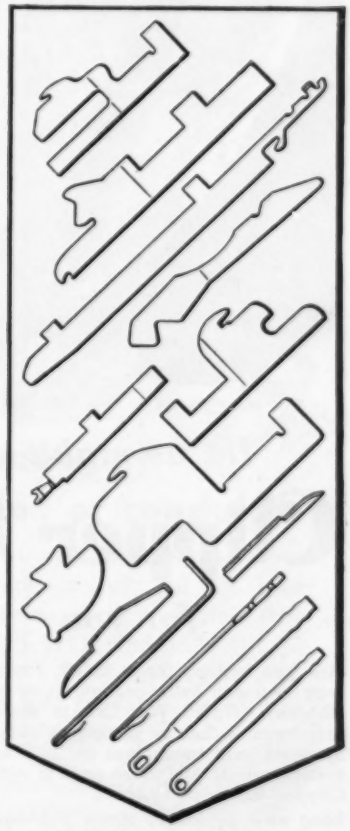
FEW COURSES with many wales is very elastic in width.

FOR BETTER FABRICS at LOWER COST

Present day tricky yarns—bulk, kink, stretch, metallic, etc.—require specially designed-expertly tempered needles and parts of extra durable vanadium steel to give high yield per machine for greatest profit.

The superiority of Ives knitting needles and parts are the result of 84 years of *mill-tested* experience combined with skilled personnel.

Let Ives help *you* lower costs of operation with needles, sinkers and other operating parts for both circular Spring-Beard and Latch machines.



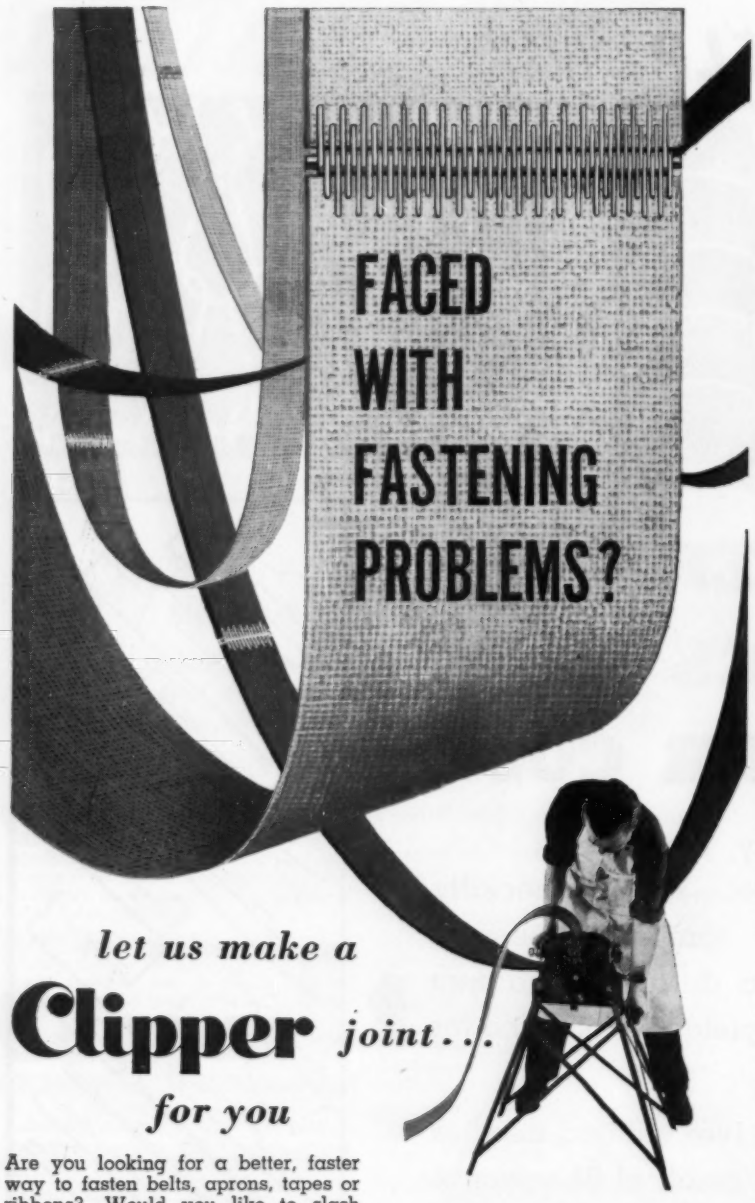
Contact Ives if you operate these machines:

SUPREME • FIDELITY • TOMPKINS
KIDDE • PRECISION • BRINTON
WILDMAN • CRANE • BANNER
REINER • SCOTT & WILLIAMS • BENTLEY

Prompt deliveries assured. Write, wire or phone CHarter 9-0396-7.

THE LOYAL T. IVES COMPANY, INC.
NEW BRUNSWICK, N. J.

For more data, write this page number on Reader-Service card. →



let us make a

Clipper *joint . . .*

for you

Are you looking for a better, faster way to fasten belts, aprons, tapes or ribbons? Would you like to slash maintenance time by putting an easy-to-fasten joint in endless belts? The fastest way to join these ends is with Clipper Hooks and Lacers.

Long used for lacing power transmission belting, Clipper fasteners are now proving their cost-cutting value in materials handling equipment, automatic pin setters, laundry equipment, food harvesting and processing equipment and in many other applications.

They produce a smooth, flexible joint in a hurry.

Let us demonstrate the advantages of a Clipper joint on the product of your choice. Send us a small sample (or the complete belt, apron, tape, or what have you) and we'll make you a Clipper joint FREE, without obligation.

Write, wire or call today for details and literature.

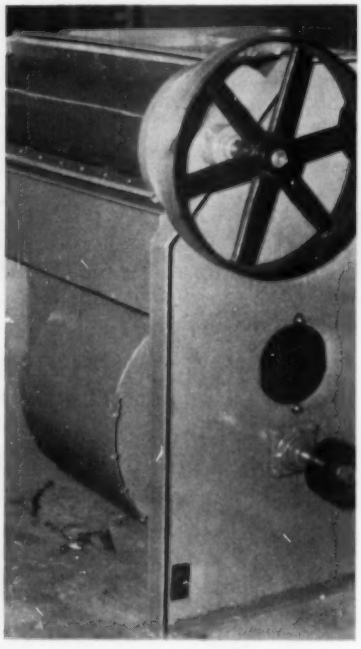
Ask your Industrial Distributor for Clipper Products

Clipper BELT LACER COMPANY

980 Front Ave., N. W., Grand Rapids 2, Michigan

to a 2-in. slab, and (5) a four-ply asphalt roof is laid directly on top of the Perlite-concrete slab. The resulting roof is very light in weight and is bonded by major roofers for 20 years.

Circle T-29 on Reader-Service Card



Condenser

A condenser without screens has been announced by Fiber Controls Corp., P. O. Box 351, Gastonia, N. C.

There are no dead air spaces to collect fiber and cause chokes; cleaning is minimized. The condenser, which operates in either a vertical or horizontal position, requires a 3- to 5-hp. drive. Capacity is about 1,500 lbs. per hr.

Circle T-30 on Reader-Service Card

Small Electric Motors

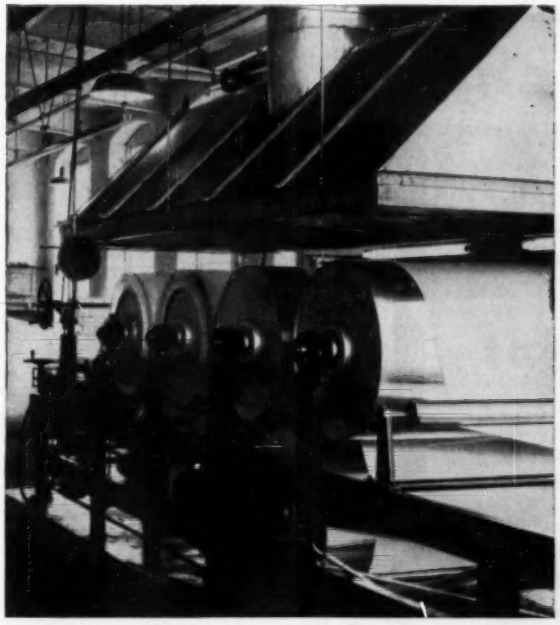
A motor line featuring the 48-Frame motor has been introduced by Century Electric Co., 1806 Pine St., St. Louis 3, Mo. The motor design offers weight and space savings but is still rugged. The new line of motors is made in 1/20 to ¾ hp.

Circle T-31 on Reader-Service Card

All-Purpose Hose

A hose that can handle air, oil, water, and mild chemicals has been announced by Manhattan Rubber Div., Raybestos-Manhattan, Inc., Passaic, N. J. The hose, called Allflex, has eight major advantages, including long life and nonkinking.

Circle T-32 on Reader-Service Card



DOUBLE YOUR DRYER OUTPUT WITH NEW G-E QUARTZ INFRARED LAMP

IT is now possible to double your dryer production with only ⅓ extra investment in equipment. The extremely high heat concentration possible with new General Electric quartz infrared lamps enables you to run dryers at higher speeds and still get adequate drying. Where drying is your bottleneck you can increase the output of your entire plant.

THE G-E QUARTZ INFRARED LAMP gives you fast, positive, and simplified control. In many cases you can eliminate the mechanical safety devices needed to rotate the reflector when the web stops. That's because the output of the lamp drops 80% in only 2 seconds when turned off! And it heats up just as fast. The radiant energy output of the G-E quartz infrared lamp (that's the energy that works for you) is 85% of input. This high radiating efficiency is possible because of the high operating temperature of the lamp filament—over 4000°F!

YOU CAN USE G-E quartz infrared lamps to increase your output and improve quality either in conjunction with your steam cans or to replace steam heat altogether. For more information on how you can use G-E quartz infrared lamps to improve and increase *your* production, write: Large Lamp Dept., TW-10, General Electric Company, Nela Park, Cleveland 12, Ohio.

Progress Is Our Most Important Product

GENERAL ELECTRIC

FAST

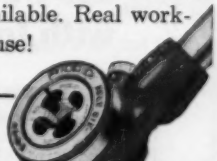
is the word for these efficient little

RIDGID

Drop-Head Dies!

Easy threading of ⅛" to 2" pipe or conduit

Snap size head you want into ratchet drive ring, from either side—it can't fall out. Dies reverse easily for close-to-wall threading. 00R and 0R, ⅛" to 1"; 111R and 11R, ⅛" to 1¼"; 12R, ⅛" to 2". Free carrier with sets. Conduit and special dies available. Real work-savers—at your Supply House!



RIDGID Bolt Threaders, too—No. 00R-B, ¼" to 1", National coarse and fine thread, efficient drop-head dies.

"Threaded Pipe—*It's Tight—It's Best—Costs Less*"

RIDGID
Work-Saver Pipe Tools

The Ridge Tool Company, Elyria, Ohio, U. S. A.

For more data, write this page number on Reader-Service card. →

STEEL

Every kind in stock

Immediate shipment

Principal Products: Bars, Structurals, Plates, Sheets, Tubing . . . Carbon, Alloy and Stainless Steels, Machinery and Tools, etc.

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Joseph T. Ryerson & Son, Inc. Plants at: New York • Boston • Wallingford, Conn. • Philadelphia • Charlotte, N. C. • Cincinnati • Cleveland • Detroit Pittsburgh • Buffalo • Chicago • Milwaukee • St. Louis • Los Angeles San Francisco • Spokane • Seattle

use PENFORD FINISHING GUMS with Insolubilizing Resins

Good permanent finishes on cotton sport denims, shirting materials, and dress goods that withstand standard washing tests are now made possible with the combination of Penford Finishing Gums and urea-formaldehyde or melamine resins. Of the different grades of Penford Finishing Gums there is one best suited to your process.

Ask Penick & Ford's Technical Sales Service Engineers to assist you in selecting the Penford Gum best suited for use with your equipment.

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INCORPORATED
420 LEXINGTON AVE., NEW YORK 17, N.Y.; 1531 MARIETTA BLVD., ATLANTA, GA.; CEDAR RAPIDS, IOWA; 18 CALIFORNIA ST., SAN FRANCISCO 11, CALIF.

Rigid Plastic Pipe

Polyvinylchloride pipe in rigid form has been marketed by Joseph T. Ryerson & Son, Inc., Box 8000-A, Chicago 80, Ill. The pipe is valuable in transmission of chlorine gas and is also resistant to most acids, alkalis, alcohols, and other chemicals. The pipe can be obtained in schedule-40 and schedule-80 pipe sizes.

Circle T-33 on Reader-Service Card

Stainless-Steel Faucet

A fumetight faucet that can be used to dispense volatile and flammable solvents has been marketed by Economy Faucet Co., Newark, N. J. An antiflash screen is built into the nozzle. Metal-to-metal contact within the faucet has been eliminated by the use of Kel-F sealing rings.

Circle T-34 on Reader-Service Card

Refrigeration Machine

Refrigerating units that use steam to produce chilled water are being built in 100- to 700-ton capacity by Carrier Corp., Syracuse 1, N. Y. Operating on the absorption principle, the machines are light, have no major moving parts, and can be controlled by a time clock, thermostat, or push button. Water is the refrigerant. Waste process steam or steam generated for the purpose with low-cost fuels makes the units economical to operate.

Circle T-35 on Reader-Service Card

Air-Driven Pump

Vanton Pump & Equipment Corp., 201 Sweetland Ave., Hillside, N. J., announces a pump driven by an air motor. The pump is particularly useful where there is a fire hazard involved in pumping liquids or slurries. No seals or stuffing boxes are employed. The pump can be supplied in plastic, rubber, or stainless steel as required, in capacities to 20 gals. per min. and to operate at 50 lbs. per sq. in.

Circle T-36 on Reader-Service Card

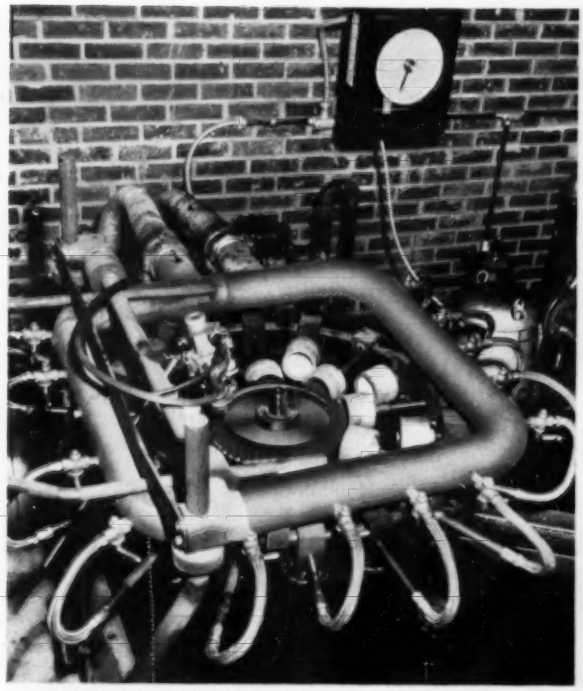
Plastic Brine Tanks

Brine-storage tanks and dissolvers have been developed by International Salt Co., Inc., Scranton, Pa. The tanks are made of polyester-reinforced glass fiber and are corrosionproof. Brine levels are easily seen through the translucent material.

Circle T-37 on Reader-Service Card

CONTINUED ON PAGE 204

. . . add YEARS to your GEARS



MEMBER AMERICAN GEAR MANUFACTURERS ASSOCIATION

Now you can have heat-treated steel gears giving FOUR TIMES more life than similar gears which are untreated or poorly treated.

The new completely scientific heat-treating installation shown here, assures uniformily hardened gears up to 17" diameter by 6" face. The gear is rotated in electronically controlled radiant heat, thus providing 100% uniformity of treatment from gear to gear as well as from tooth to tooth. Only the web and bore remain soft, insuring a minimum of distortion.

Get information or quotation about the Ferguson Gear process that will save you trouble, time and money. Contact your nearest Ferguson Sales Engineer, or write direct to Ferguson Gear Company, Gastonia, N. C.

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SALES OFFICES { GREENSBORO, N. C. — B. T. GLADDEN
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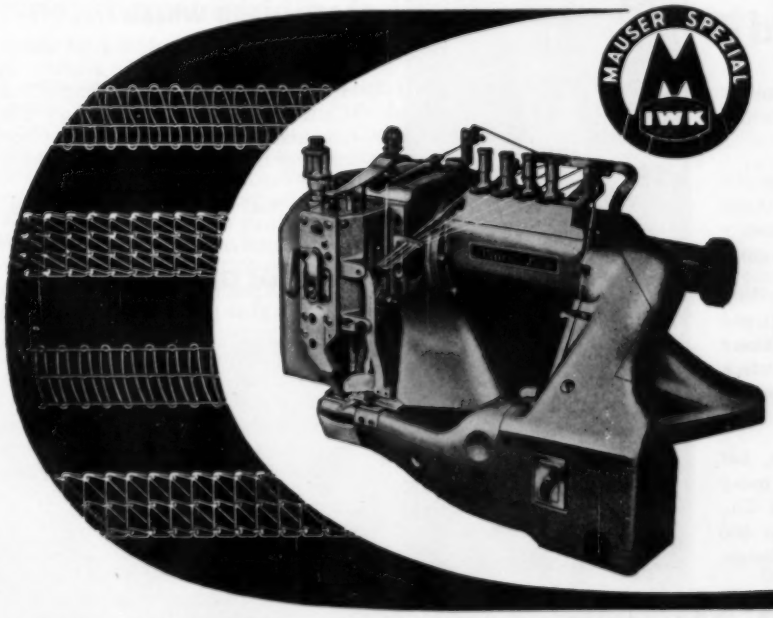
LA GRANGE, GA. — JOHN FERGUSON — TEL. 5040, P. O. BOX 486

MAUSER SPECIAL Feed-off-the-arm Flat-seam Machine MAUSER LOCK



with trimmer and differential feed dog producing an extremely elastic 4-needle-covering seam with one lay in thread for the trimming, sewing together and hemming of all kinds of hosiery as well as elastic material.

- **Number of needles 3 and 4**
- **Breadth of seam 7/32" and 9/32"**
- **Number of stitches per minute up to 2800 and 3400**

The automatic lubrication system and the oil circulation controls greatly facilitate the service and maintenance of the machine.

Illustrated leaflets will be supplied on request.

INDUSTRIE-WERKE KARLSRUHE Aktiengesellschaft · KARLSRUHE · (GERMANY)

For more data, write this page number on Reader-Service card. →

Cuts Production Cost

on Mens', Womens' Sweaters

● High-speed, trouble-free operation assured by simplicity of design, sound engineering, precision unit-construction of all sub-assemblies. Wide operating range, new refinements, increase production up to 20%
● Versatile! Handles synthetics, worsteds, zephyr, cashmere yarns, etc. Stitch construction includes interlock, rib, jersey which can be incorporated with tuck and welt stitches and (on interlock fabric) fancy stitches embodying stripes, colored checks, blister, grenadine; also pleat effects and jersey interlock. Our big backlog of orders proves preference for OGA and OTA equipment—makes it necessary to place your orders several months ahead of wanted delivery date! Write at once!

ORDNANCE machines are available in 18", 20", 22" and 24" with 8 feeds; in 30" and 32" with 12 feeds.
To meet todays demand for JERSEY fabrics let us demonstrate our OTSA model, embodying many new exclusive features!

ORDNANCE GAUGE CO. • PHILADELPHIA 25, PA.
EXCLUSIVE SALES REPRESENTATIVE
MAC M. ROTHKOPF 317 BUSHWICK AVE. BROOKLYN, N. Y.

OTSA OGA OTA
ORDNANCE GAUGE
CIRCULAR, FULLY AUTOMATIC
KNITTING MACHINES

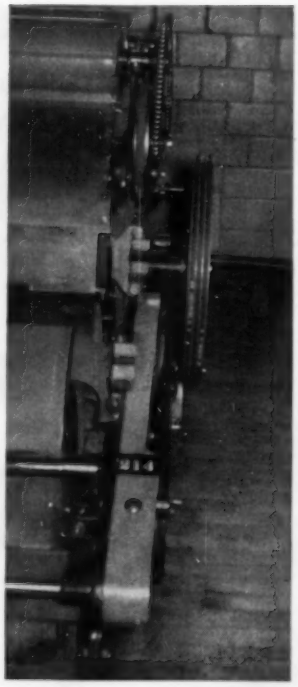
Find the motor driving this card?

No overhead line shafting . . . no motor overhang between machines—where's the motor?

No, you can't see the motor because it's a 1½ hp., 900 RPM Fairbanks-Morse Axial Air Gap Textile Motor that fits completely within the over-all dimensions of the card.

This compact motor (10½" including shaft) can eliminate for you the dirt and inefficiencies of overhead shafting. There are no clutches, no gears. Using a stock V-belt drive, this lint-free motor brings the card up to 165 RPM in 30 seconds.

No, you can't see the motor here, but we'll be glad to show it to you. Write today to Dept. TW-8, Fairbanks, Morse & Co., 760 Lee St., S.W., Atlanta 3, Ga., or 600 South Michigan Avenue, Chicago 5, Illinois.



FAIRBANKS-MORSE
a name worth remembering when you want the BEST

ELECTRIC MOTORS AND GENERATORS • DIESEL LOCOMOTIVES AND ENGINES • PUMPS
SCALES • RAIL CARS • HOME WATER SERVICE EQUIPMENT • MOWERS • MAGNETOS

Hot and Cold Cabinet

Packaged units that provide local controlled temperatures from —100 to +600° F. are available from Atmosphere Control Co., Inc., 5315 Chester Ave., Philadelphia 13, Pa. The units are designed around a refrigeration system that can produce —100° F. with 20½ ins. of vacuum. A new refrigerating gas produces results quickly.

Circle T-38 on Reader-Service Card

Safety Rubber Stoppers

Rubber stoppers with enlarged holes lined with a sealing compound are being produced by Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa. Sizes 0 to 1 have 4.5-mm. holes; sizes 2 to 7 have 5.8- to 6.0-mm. holes. Glass tubing or thermometers can be easily inserted in the redesigned stopper; the sealing effect of the liner prevents any leakage.

Circle T-39 on Reader-Service Card

Power-Driven Conveyors

Loading, unloading, and stacking are made easier with a variable-pitch conveyor marketed by Rapids-Standard Co., Grand Rapids, Mich. Models made of aluminum in 10- and 12½-ft. lengths are available, mounted on adjustable toggle stands.

Circle T-40 on Reader-Service Card

Lightweight Wheels

Aluminum alloy rubber-tired wheels for trucks and trailers are available in 4- to 12-in. dia. from Nutting Truck Caster Co., Faribault, Minn. Demountable rims permit easy replacement of tires. Capacities range to 800 lbs.

Circle T-41 on Reader-Service Card

Armored Glass Pipe

Pyrex glass pipe, fitted with a polyester-impregnated Fiberglas coating, has been announced by Corning Glass Works, Corning, N. Y. The 1/16-in. coating protects the pipe and, in case of breakage, will carry the same work load as the pipe.

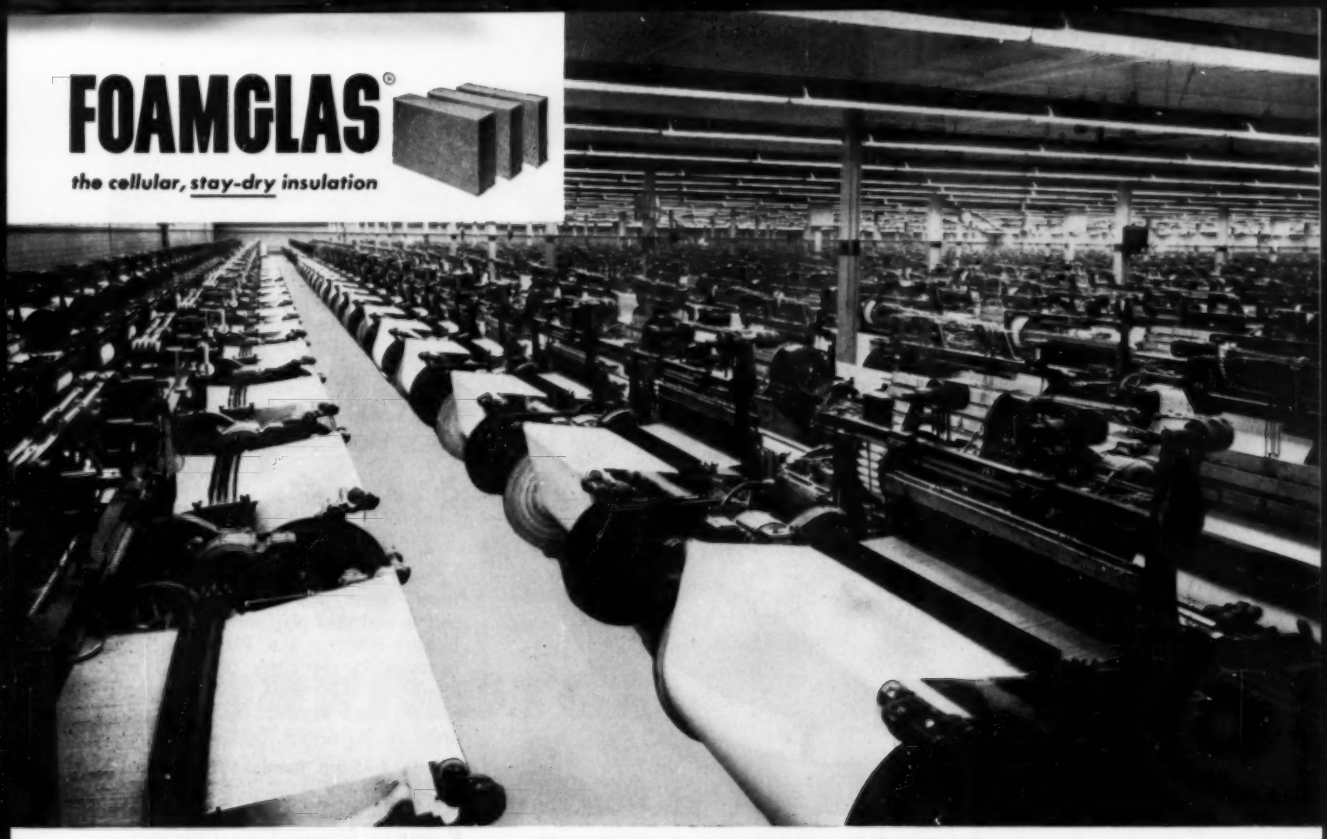
Circle T-42 on Reader-Service Card

Infrared Dryers

An infrared drying unit that uses a General Electric quartz-tube heating element has been marketed by J. E. Doyle Co., 1220 W. 6th St., Cleveland, Ohio. Features are instantaneous heating, and rapid cooling

FOAMGLAS®

the cellular, stay-dry insulation



Now celebrating their 60th anniversary as a maker of top-quality print cloths, twills and broadcloths . . . Clinton Mills' broad textile manufacturing experience led them to rely on stay-dry FOAMGLAS to furnish dependable insulating protection for this 1300-loom weave room.

J. B. Templeton, Production Vice President, Clinton Cotton Mills, Clinton, S.C., reports . . .

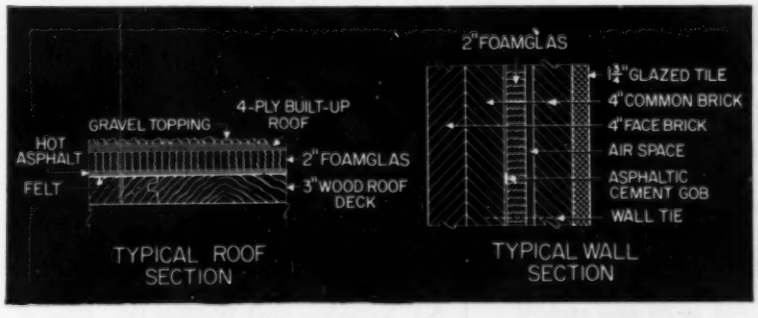
"FOAMGLAS roof and wall insulation stays dry, helps stabilize temperature-humidity to lower operating costs in this weave room"

When warp and filling yarns dry out and break, textile looms shut down. That cuts loom efficiency and boosts operating costs. The answer is constant, accurate temperature-humidity control to keep yarns workable. For such control, dependable insulation is a must!

"We picked FOAMGLAS to insulate roof and walls of the new 1300-loom weave room added to our Clinton, S.C., mill last year," says J. B. Templeton, Production Vice President of Clinton Cotton Mills. With its structure of closed glass cells, FOAMGLAS can't absorb moisture and lose efficiency as other insulations do. It stays dry and effective.

Mr. Templeton concludes: "FOAMGLAS aids in maintaining dependable temperature-humidity control. Yarn fibers stay moist, workable and free from static electricity. Condensation on weave room walls and ceiling is eliminated. Our looms operate at or near rated capacity with minimum shutdowns."

You'll profit, too, when you insulate roofs, ceilings, walls, piping or equipment with *stay-dry* FOAMGLAS. It's completely inorganic—therefore rotproof, fire-proof and acid-proof. It's strong, rigid and dimensionally stable, too. Prove it! Send today for a free sample and directions for six simple tests—easily performed in your own office. Prove to yourself that FOAMGLAS is *your* ideal insulation! Write—



Drawings show application of FOAMGLAS on roof and walls of Clinton Mills' new weave room. Since the insulation prevents condensation, there is no danger of moisture damage to walls, roof, window frames or floors.

Pittsburgh Corning Corporation

Dept. AH-106, One Gateway Center
Pittsburgh 22, Pennsylvania

In Canada: 57 Bloor St. W., Toronto, Ontario

PC® also manufacturers of PC Glass Blocks

MACHINES FOR YARNS • TWINES • CORDS • ROPES

SPECIALIZED EXPERIENCE
TWISTING • STRANDING
FORMING • LAYING
COTTON • JUTE • MANILA • SISAL
NYLON • DACRON • ORLON • SARAN
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HASKELL-DAWES MACHINE COMPANY
2231 E. ONTARIO STREET, PHILADELPHIA 34, PENNA.

picture from plant of LUISA SPAGNOLI
Perugia, Italy
—one of our foreign users

TOMPKINS
over 110 years' proven performance—
LATCH AND SPRING NEEDLE
KNITTING MACHINES

"mostest runnin' knittin' machines in the plant!"

The Head Knitter of an U. S. mill made this brief yet factual statement. Knitters in the know are quick to substantiate the comment, with good reason. The Tompkins record stands undisputed . . . over 110 years of proven money-makers to the Knitting Industry.

We see some Tompkins machines running that are 70 years old — still going strong despite their outdated performance in comparison with new model Tompkins machines. It's like seeing an old Model T alongside a new '56 Ford! Let us help you put in a modernization plan.

— ESTABLISHED 1864 —
TOMPKINS BROS. CO.
623 Oneida St. • Syracuse 4, N. Y.

TOMPKINS
MODERN SPRING NEEDLE
KNITTING MACHINE
with changeable feeds to make
• Fleece Coatings • Sweat Shirts
• Jersey • Terry • Patterns
• Stripes • Lastex Inlay
—all on the same machine!

when current is shut off. The units are supplied in 36-in. fixtures rated at 2,500 w. and can be connected to give high, medium, and low heats.

Circle T-43 on Reader-Service Card

High-Strength Steel Bar

A high-strength steel bar is being produced by LaSalle Steel Co., Hammond, Ind. Called Fatigue Proof, it has properties usually associated only with heat-treated steels and yet is easily machined.

Circle T-44 on Reader-Service Card

Electric Truck

An electric truck is available from Lewis-Shepard Products, Inc., Watertown, Mass., for handling tin plate pallets and skid platforms. Called the Jacklift Electric Tin Plate Truck, it is made in capacities of 4,000 and 6,000 lbs. The truck has two speeds forward and reverse with an automatic timing device.

Circle T-45 on Reader-Service Card

Remote Room Conditioner

A line of Acme Flo-Temp remote room conditioners has been announced by Acme Industries, Inc., Jackson, Mich. The conditioners are available in three basic capacities of 200, 400, and 600 cu. ft. per min.

Circle T-46 on Reader-Service Card

Hose Reel

A dual hose reel has been designed by Clifford B. Hannay & Son, Inc., Westerlo, N. Y. This reel can be adapted for top or bottom rewind; and two fluids, or a fluid and a gas, can be handled through one hose reel.

Circle T-47 on Reader-Service Card

Liquid Chiller

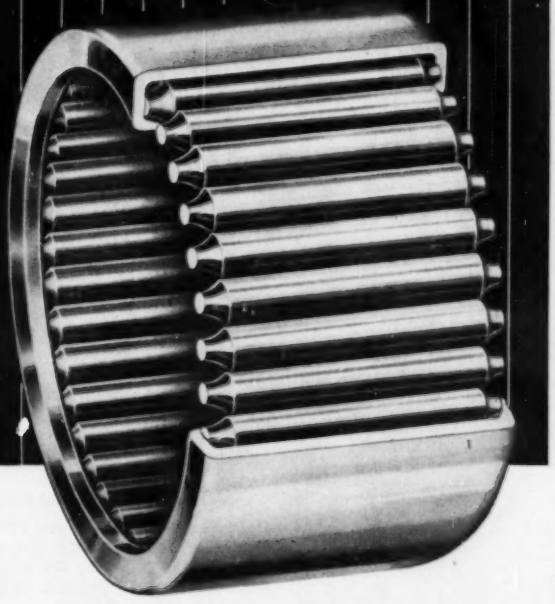
An advancement in direct-expansion liquid-chiller design is announced by Acme Industries, Inc., Jackson, Mich. A unique feature of this new chiller is an aluminum insert embedded in the walls of the tubes that provides better heat conductivity.

Circle T-48 on Reader-Service Card

Welding Gun

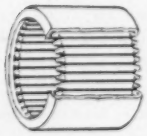
A welding gun is being produced by Nelson Stud Welding Div., Gregory Industries, Inc., Toledo Ave. at

here's why...

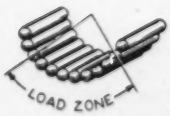


TORRINGTON

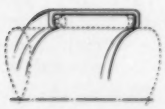
DC needle bearings give high-capacity performance in minimum space



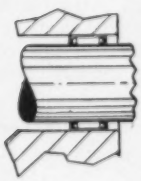
Unique construction—accurately drawn, surface-hardened shell retains rollers and serves as outer raceway.



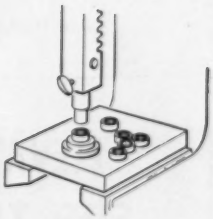
Full complement of small diameter rollers—precision-ground and through-hardened—assures top capacity by distributing load over large number of contacts.



Turned-in lips of the case-hardened outer shell keep dirt and grit out, lubricants in—while retaining trunnion ends of rollers. All wear surfaces of outer race are case-hardened.



No inner race required on surface-hardened shafts—reduces space requirements, lowers unit costs.



Simple assembly—arbor press seats bearing in round housing bore. No collars, shoulders or retaining rings needed.

Closed end type DC Needle Bearings are available for stub shaft applications. The closed end provides a perfect seal at no extra cost.

Needle Bearings are made in a Precision Series for most applications and an Extra Precision Series where low radial play and minimum eccentricity are required. Easy lubrication through optional hole in shell or through hole in shaft assures long service life. Bearings can be pre-packed with suitable grease for those applications requiring grease lubrication.

See our new Needle Bearing Catalog in the 1956 Sweet's Product Design File—or write direct for Catalog No. 55.

THE TORRINGTON COMPANY

Torrington, Conn. South Bend 21, Ind.

District Offices and Distributors in Principal Cities of United States and Canada

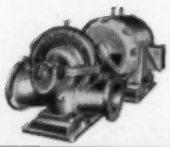
TORRINGTON BEARINGS

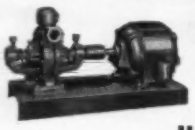
90th ANNIVERSARY 1866–1956

Needle • Spherical Roller • Tapered Roller • Cylindrical Roller • Ball • Needle Rollers

Superb Performers

AURORA APCO *Turbine-Type* PUMPS





AURORA *Always* PUMPS

AURORA® *Centrifugal*

for EVERY LIQUIDS HANDLING JOB in INDUSTRY

The engineer-favor accorded "PUMPS by Aurora" rests squarely upon performance satisfaction. Why not let Aurora precision and quality serve your requirements, too?

ASK for CONDENSED CATALOG M-3

AURORA APCO *Turbine-Type* PUMPS

are available in SINGLE STAGE • TWO STAGE • FOUR STAGE • WATER JACKETED • STAINLESS STEEL or SPECIAL METALS for "1001" DUTIES.

AURORA *Centrifugal* PUMPS

are available in SINGLE and TWO STAGE HORIZONTALLY SPLIT CASE • SIDE SUCTION • VERTICAL • NON CLOG • SUMP • MIXED FLOW • SPECIAL DESIGN ETC.

DISTRIBUTORS IN PRINCIPAL CITIES

AURORA PUMP DIVISION
THE NEW YORK AIR BRAKE COMPANY
31 LOUCKS STREET • AURORA • ILLINOIS
INTERNATIONAL SALES OFFICE, 90 WEST ST., NEW YORK 6, N. Y.

ELEVATED STEEL TANKS

• For more than a century, COLE elevated tanks have been helping provide fire protection and adequate water reserve for the textile industry.

Capacities from 5,000 to 2,000,000 gallons—and covering designs ranging from standard hemispherical self-supporting bottom to spherical tank on tubular tower. Send us your inquiry, stating capacity, height to bottom and location. Write for *Tank Talks*.

R. D. COLE MANUFACTURING CO. COLE NEWNAN, GEORGIA

Elevated Tanks, Pressure Vessels, Chemical and Processing Equipment from Aluminum, Stainless and Carbon Steel, Monel and Other Alloys.

R. D. COLE MANUFACTURING CO. NEWNAN, GA.

28th St., Lorain, Ohio. The gun features a stock molded of glass-filled Union Carbide phenolic resins and made by the Fiberite Corp., Winona, Minn.

Circle T-49 on Reader-Service Card

Automatic Lubricator

An automatic lubricator for its Monoflo Rotating Cable conveyor is available from the M-H Standard Co., 513-521 Communipaw Ave., Jersey City 4, N. J.

Circle T-50 on Reader-Service Card

Packaged Liquid Chillers

A line of packaged liquid chillers has been announced by Acme Industries, Inc., Jackson, Mich. Known as Flow-therm, the chillers are available in a wide range of capacities from 15 through 300 tons.

Circle T-51 on Reader-Service Card

Evaporative Condensers

A line of Model-MC evaporative condensers and Model-MT cooling towers has been announced by Baltimore Aircoil Co., Inc., Baltimore, Md. These models offer condensers in sizes up to 350 tons and towers up to 400 tons in a single, factory-assembled unit. The units are compact and require a minimum of installation space.

Circle T-52 on Reader-Service Card

Toggle Switch

A toggle switch, designated 21AT1, that simplifies basic circuit designs of remote-control equipment has been developed by Micro Switch Div., Minneapolis-Honeywell Regulator Co., Freeport, Ill. The unit, first of a new series, is a four-pole assembly; one pole indicates which circuit was operated last. The switch is designed to provide positive actuation and prevent false signals or operation from partial movement of the toggle lever. The basic switches have snap-acting contacts that assure long mechanical and electrical life.

Circle T-53 on Reader-Service Card

Continuous Color Sampler

Continuous sampling of color and turbidity in liquids and slurries is accomplished by an instrument developed by Kaye Development Co., a subsidiary of Atomic Instrument Co.,

GIVE FABRICS A HAND!

Jacques Wolf Amprozyme and Protozyme for fast, complete de-sizing

The loud applause is for the way both Amprozyme and Protozyme (in liquid or powder form) take the guess-work out of de-sizing—giving fabrics a *good hand* and a uniform ground that's perfect for dyeing without streaks or shading. Potent proteolytic protein degrading enzymes and amylolytic starch digesting enzymes do the converting operation by attacking starches and/or proteins at the very same time.

Jacques Wolf Amprozyme and Protozyme have unlimited uses and application in textile processing and research. Whatever your particular problem, we would welcome the opportunity to submit samples and complete data—without obligation. Contact:

JACQUES WOLF & CO.
Chemicals PASSAIC, N. J.

Plants in: Clifton, N.J., Carlstadt, N.J., Los Angeles, Calif.

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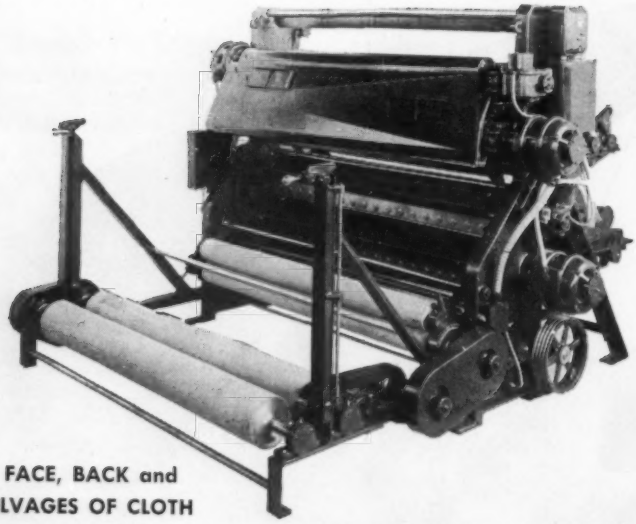


CLEAN FACE, BACK and BOTH SELVAGES OF CLOTH IN A HERMAS SHEAR *AUTOMATICALLY*

Removes all hanging selvage ends at one pass at rate of 150 yards per minute.

Do a perfect cleaning job on up to 150,000 yards of cloth a week.

One important mill has handled its entire production of 450,000 yards a week with a single Hermas Shear. It has operated that shear three shifts for eight years. In all that time it has not had to stop the shear ONCE to replace a single part!

For performance like this investigate the Hermas Shear.

Write today for brochure. No obligation.

HERMAS Machine Co. 229 Royal Avenue Hawthorne, New Jersey

DIRT can't anchor...

sails away with **Cindet** all-purpose liquid detergent

DIRT FILM breaks up on contact with Cindet suds. The particles ride up inside the bubbles — cannot anchor — literally sail away via your suction or mop pick-up. The job is easier—the surface is cleaner. Dilute in lots of water—hard water makes no difference. Use on any kind of flooring — any surface that can stand plain water.

For free sanitary survey of your premises ask your Dolge service man

Dependable DOLGE WESTPORT, CONNECTICUT

The Great "EQUALIZER"

In the old west, a Colt revolver was known as the "great equalizer." Today, it is your vote.

When you step into the voting booth, you enter the one place in the world where all men are truly equal. Your secret vote carries the same weight and counts exactly as much as that of the mightiest person in the U.S.A.

See you at the polls!

Published as a public service in cooperation with The Advertising Council

Cambridge, Mass. Color deviations are noted by a visual or audible warning triggered by the instrument. A 50-millivolt proportional outlet is provided for direct process control.

Circle T-54 on Reader-Service Card

Pipe Strainers

Strainers to be mounted in oil, air, gas, steam, or water lines have been marketed by Armstrong Machine Works, Three Rivers, Mich. Operating at pressures to 900 lbs. per sq. in., the Y-type units feature carbon-molybdenum steel strainers made in 24x110 wire mesh or perforated screens with 226 holes per sq. in. of 0.045 ins. dia. The strainers are made in six sizes from ½ to 2 ins.

Circle T-55 on Reader-Service Card

Tubular Filter

A vertical filter for water or chemicals has been announced by Industrial Filter & Pump Mfg. Co., 5916 Ogden Ave., Chicago 50, Ill. The fluid to be filtered flows through a fabric cover mounted on perforated tubes. Cleaning is accomplished by sudden release of air pressure in the tube chamber. Various types and capacities of filters are offered.

Circle T-56 on Reader-Service Card

Teflon-Based Pipe Dope

Corrosive liquids are more easily held in pipes when joints are treated with Teflon-based pipe dope marketed by Eco Engineering Co., 12 New York Ave., Newark, N. J. Other advantages include nonseizing qualities and resistance to galvanic corrosion.

Circle T-57 on Reader-Service Card

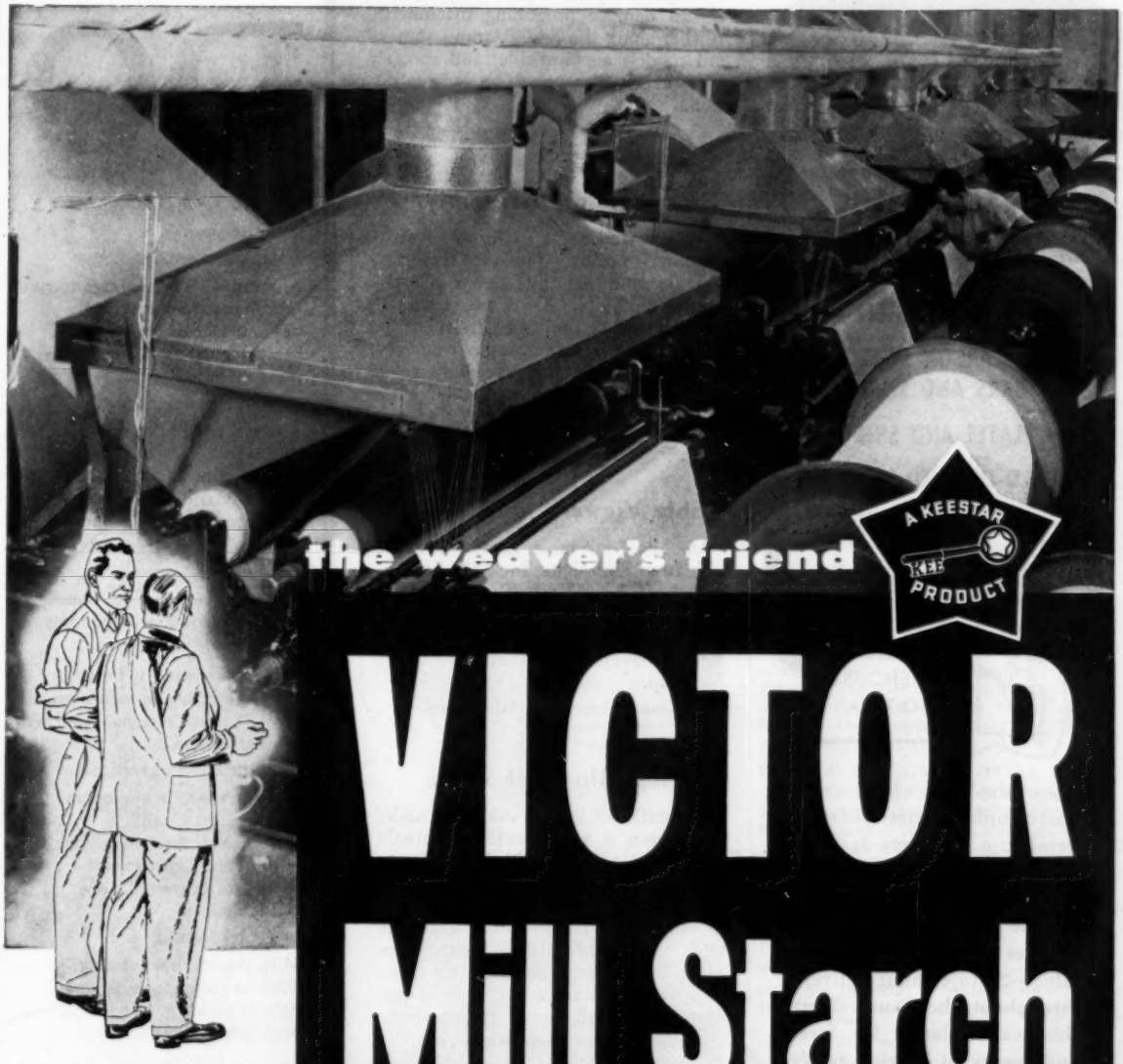
Alnico Magnets

A line of nonelectric alnico magnets has been announced by Ding Magnetic Separator Co., Milwaukee, Wis. Designed for removing tramp iron from moving material, the improved design assures a smoother flow without interruption by mechanical barriers.

Circle T-58 on Reader-Service Card

Magnetic Grates

Newly designed magnetic separators in the form of grates have been marketed by Eriez Mfg. Co., Erie 6, Pa. The separators consist of alnico magnets mounted in steel tubes. Tramp iron in materials passing



the weaver's friend

A KEESTAR KEE PRODUCT

VICTOR Mill Starch

always uniform and backed by Keever Service

Charles C. Switzer, Vice President
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1200 S. C. NATIONAL BANK BLDG.
GREENVILLE, SOUTH CAROLINA

THE KEEVER STARCH CO. ★ GENERAL OFFICES ★ COLUMBUS 15, OHIO

Processors of corn, wheat and blended starches for industry since 1898

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STEEL FOR THE TEXTILE FIELD

- STAINLESS STEELS
- CARBON STEEL BARS AND SHAPES
- PLATES AND SHEETS
- COLD-FINISHED SHAFTING
- STRUCTURALS

One of the South's largest and most complete varieties of steel warehouse products is your assurance of immediate shipment. Whether your order is for one piece or a carload, it will get the same rapid handling—24- to 48-hour delivery throughout the South. Next time call Atlantic for Steel and see what service *really* means.

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COMPLETE HANDBOOK

Latest stock and weight handbook.

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WAREHOUSE DIVISION
Atlantic Steel Company
575 14th St. N.W., Atlanta 1, Georgia, TRinity 5-3451

through the grate is picked up before it can damage processing machinery further along the line. Various standard models are available, and special types can be built to suit any installation.

Circle T-59 on Reader-Service Card

Thermocouple Assembly

A thermocouple assembly with patented positive pressure seal has been introduced by Conax Corp., Buffalo 21, N. Y. Called Conax Safety Wells, they are designed to permit small thermocouple elements to be used with greater safety than has previously been possible with heavier assemblies.

Circle T-60 on Reader-Service Card

Table Viewer

A 2¼x2¼-in. table viewer is available from Karl Heitz, Inc., 480 Lexington Ave., New York 17, N. Y. The viewer renders a 4X magnified stereoscopic image and can be adapted to handle transparencies, slides, or uncut filmstrip.

Circle T-61 on Reader-Service Card

Seatless Blow-Off Valve

A seatless blow-off valve for boiler blow lines is being made by Yarnall-Waring Co., Mermaid Lane, Philadelphia 18, Pa. This valve has no seat to score, wear, clog, or leak and is engineered to prevent water hammer. A hollow nitralloy plunger assures free blow. The valves are made in a variety of angle and straight patterns to suit all piping arrangements.

Circle T-62 on Reader-Service Card

3-D Binocular Magnifier

Magnified vision in third dimension is made possible by binocular-type inspecting glasses announced by Edroy Products Co., 480 Lexington Ave., New York, N. Y. Called a Magni-Focuser and weighing only 3 oz., it can be worn with or without eyeglasses. When used, normal vision can be resumed by slightly raising the head and without removing the Magni-Focuser.

Circle T-63 on Reader-Service Card

Emission Microscope

An emission microscope has been announced by Research and Controls Div., North American Phillips Co., 750 S. Fulton Ave., Mount Vernon,

DO

you know these mill features of Alistran, the miracle metallic yarn?

NO NEED FOR STOPPERS!

Alistran is strong enough to run *unsupported* automatically without fear of breakage . . . has *twice* the tensile strength of most metallics.

TROUBLE FREE QUILLING!

Alistran spells the end of this bugaboo — can be quilled smoothly and unbrokenly in the fastest automatic operations.

EXPERIENCE RECORD

of mill after mill gives Alistran an A for handling ease and production economy.

IMMEDIATE DELIVERY!

Alistran ends costly inventory supplies with shipments on day of order. Overnight delivery in many areas.

TECHNICAL ASSISTANCE

Alistran's textile engineers will visit your mill to advise and assist on your initial run. Experience reports of other mills are available.

INCREASES YIELD!

Mills report that running Alistran unsupported gives gain in yield of 15 to 20% over other metallics.

Alistran is brilliant, non-tarnishable, moth-proof, won't shrink. Can be woven on any type loom or knitting machine.

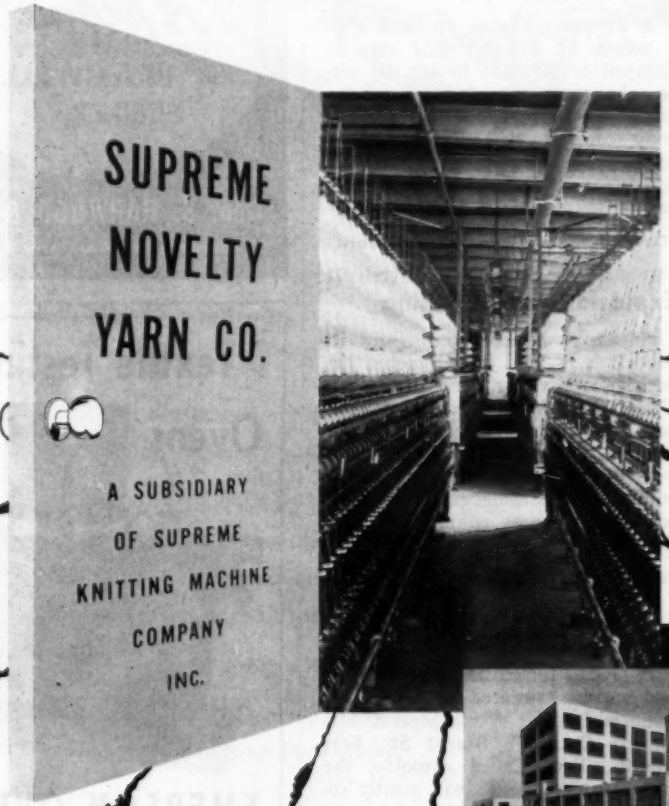
Phone or write for Free samples today!

ALISTRAN* by
MULTI-TEX
PRODUCTS CORP.
56 ELM ST., NEWARK 5, NEW JERSEY
MARKET 3-1021
*Reg. U. S. Pat. Off.

SUPREME

Announces...

The Opening Of A New Door To NOVELTY YARN Quality and Service



To Supreme customers and the knitting and weaving industry in general, Supreme opens a new door—a new source for all types of novelty yarn—The SUPREME NOVELTY YARN CO., INC.

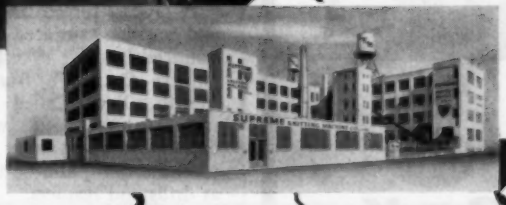
Now in operation at Ozone Park, N. Y., Supreme's new novelty yarn plant has been equipped with the most modern novelty yarn manufacturing equipment capable of producing the very latest in specialty yarns. Every type of novelty yarn such as Chenilles, Nubs, Bouclés, Splash, etc., composed of natural fibres, man-made fibres and blends, is being supplied natural or dyed to customers' specifications.

TECHNICAL CONSULTATION SERVICE

In addition to providing quality yarns, Supreme will also make available to all yarn customers the unsurpassed technical know-how of its knitting experts to assist in the development of new and profitable fabrics.

FULL ATTENTION TO SMALL OR LARGE ORDERS

Large quantity or small trial orders will receive maximum consideration and attention in terms of quality, delivery and service.



Supreme NOVELTY YARN CO., INC.

Subsidiary Of THE SUPREME KNITTING MACHINE CO., INC.

94-02 104th STREET, OZONE PARK 16, N. Y.

Southern Representative & Showroom: The Malluck Co., 914 East 4th Street, Charlotte, N. C.

SK-180

"G & K leather aprons and tapes are tannage controlled for uniformity, finish and long life."
GRATON AND KNIGHT
G&K
TEXTILE LEATHERS
GRATON & KNIGHT Company
WORCESTER, MASSACHUSETTS

"You'll get top power for more production when you use this belting."
GRATON AND KNIGHT
G&K
INDUSTRIAL LEATHERS
GRATON & KNIGHT Company
WORCESTER, MASSACHUSETTS

N. Y. A new X-ray spectograph has also been added to its line of Norelco instruments, which include diffractometers, diffraction units, powder cameras, and electron microscopes.

Circle T-64 on Reader-Service Card

Timer Valve

The flow of liquids, gas, or air can be controlled automatically with timer valves available from Automatic Controls Corp., 2390 Winewood, Ann Arbor, Mich. These valves are obtainable in a wide range of timing cycles. They fit all standard pipes $\frac{3}{8}$ in. and larger and operate on 110- or 220-v., 60-cycle current.

Circle T-65 on Reader-Service Card

Fluorescent Lamp

A fluorescent lamp available with a variety of brackets that can be clamped or mounted to any flat surface has been introduced by Luxo Lamp Corp., Tuckahoe, N. Y. The lamp can also be permanently or temporarily installed on a desk or drawing board. It is available in a variety of colors.

Circle T-66 on Reader-Service Card

Explosionproof Housing

An explosionproof housing for its Models J, JP, and JS pyrometers has been announced by West Instrument Corp., 4363 W. Montrose Ave., Chicago, Ill. An external knob permits a change in the temperature control point without removing the bolted cover. These housings can be obtained to enclose existing equipment or for new instruments.

Circle T-67 on Reader-Service Card

Metal-Armoring Process

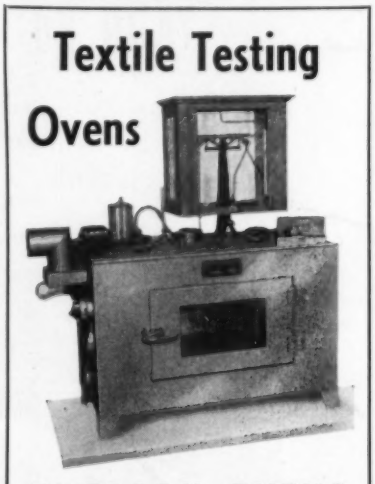
A process for coating metal-bearing and cutting surfaces has been announced by Fort Worth Steel & Machinery Co., 212 Burnet St., Fort Worth, Tex. Called Armoloy, the metal-coating process will greatly increase the life of saws, taps, bearings, machine tools, and cutting tools such as drills and reamers.

Circle T-68 on Reader-Service Card

Coil Lifters

A line of coil lifters made by Lewis-Shepard Products, Inc., Watertown, Mass., is available with either a manual hydraulic lift or an electro-hydraulic lift. The lifters have a lowered height

CONTINUED ON PAGE 220


Textile Testing Ovens
EMERSON OVENS
For accurate testing of water content in yarn, small wool samples and other textile material. The 8 Basket Oven, shown above, can be furnished with 8 baskets 3" sq. x 6" deep or 6 baskets 4½" sq. x 6" deep, complete with weighing balances, sensitive to 3 mg., weights, and automatic temperature control. Table space 20" x 40".
Details of other style Ovens with specially designed baskets to handle YOUR TESTING PROBLEM on request.
EMERSON APPARATUS CO.
177 Tremont St. Melrose 76, Mass.

REINER

scores again!

Reiner offers to the sweater trade a completely rebuilt full fashioned machine

which knits high elasticity imitation trims and eliminates time-consuming topping on operation (Patent applied for).

This newly developed Reiner machine has a knitting width of 22 to 31 inches and is available in all prevailing gauges. It is made in 10 and 12 sections for bodies and 16 sections for sleeves, operating at high speeds.

Available with lace, picot, striper, filler points, etc.

Note: These completely rebuilt full-fashioned machines carry a new machine guarantee. Ready spare parts supply.

EARLY DELIVERY

ALSO:

Reiner's improved Model GM-2 Full-Fashioned Sweater Machine is available for those who prefer a 4-section unit.

ROBERT REINER INCORPORATED

10 MINUTES FROM TIMES SQUARE

Take Bus Nos. 61 or 67, from Platform No. 60, Port Authority Bus Terminal, 41st Street and 8th Avenue, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-6882.

FOUNDED IN 1903 **550-564 GREGORY AVENUE, WEEHAWKEN, NEW JERSEY**

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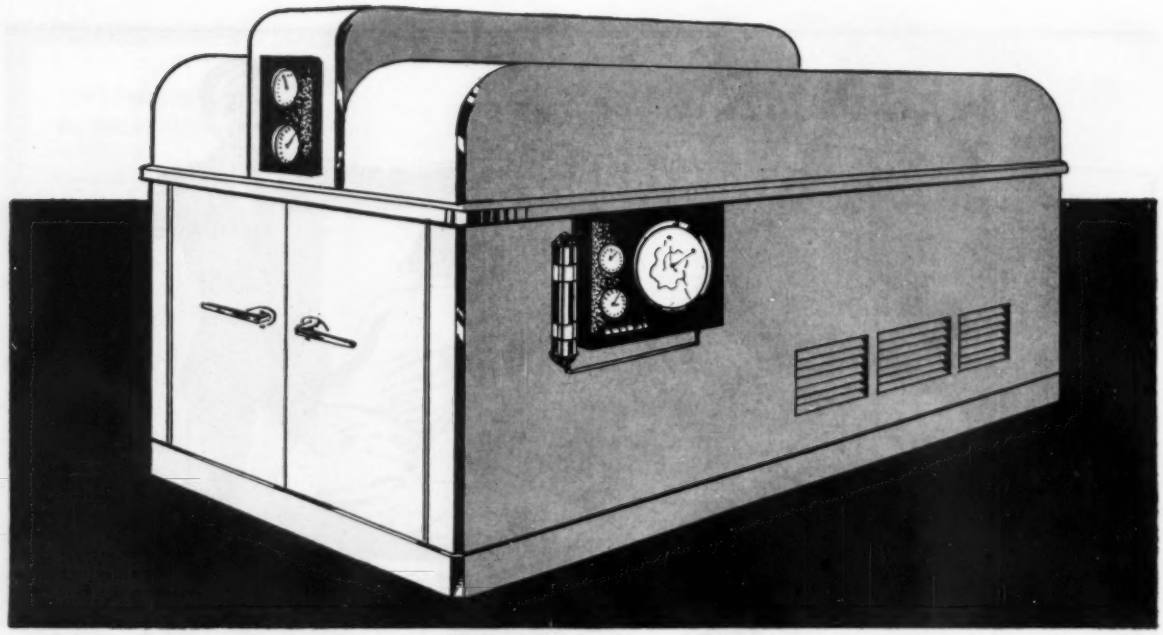


Special Armco Steel in Textile Dryers

fights corrosion, saves heat, looks good

A special Armco Steel that fights a combination of heat and corrosion is adding life and efficiency to textile dryers. It is Armco ALUMINIZED STEEL® Type 1. Used in housings and other equipment parts, it delivers four solid benefits:

1. Excellent resistance to a combination of heat and corrosion keeps equipment in service longer; reduces maintenance.

2. Highly heat-reflective ALUMINIZED STEEL holds heat in—assures fuel economy.

3. Strength of ALUMINIZED STEEL helps parts serve as sturdy structural members.

4. Parts made from this special hot-dip aluminum-coated steel have a smooth, bright surface—make good looking housings and equipment covers.

Widely Used in Textile Dryers

It's easy to see why this special Armco Steel is used in drying units for raw stock, yarn, rayon cakes, knit goods, and many other textile products.

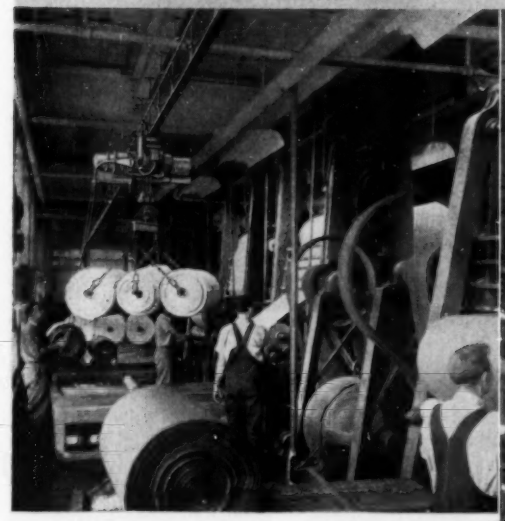
It will pay *you* to specify corrosion-resistant dryer housings of Armco ALUMINIZED STEEL. If you're planning to install new drying equipment, write us and we'll be glad to put you in touch with fabricators using Armco ALUMINIZED STEEL.

ARMCO STEEL CORPORATION

2376 CURTIS STREET, MIDDLETOWN, OHIO

SHEFFIELD STEEL DIVISION • ARMCO DRAINAGE & METAL PRODUCTS, INC. • THE ARMCO INTERNATIONAL CORPORATION

USE CEILING SPACE FOR TRANSPORTING MATERIALS



SAVES FLOORS-SPACE-TIME

Dozens of textile mills have discovered that unused ceiling space can be put to profitable use by installation of overhead Cleveland Tramrail materials handling equipment.

Floor congestion is relieved by delivering materials overhead. Floor wear is greatly reduced. Floor space is saved.

The many usual floor hindrances do not impede Cleveland Tramrail. When transporting materials overhead there are no men, machines or other obstacles in the way. The path ahead is always clear and it is the best and most efficient route because it is carefully planned that way.

Let us demonstrate how you too can profit with Cleveland Tramrail for handling rolls, lap, beams, bales, raw stock, etc. No obligation, of course.

(Above) It is easy to convey heavy rolls of cloth and place them into the hookers with this hand propelled carrier and electric hoist

(Upper left) Three rolls of cloth are usually carried at a time with the Cleveland Tramrail system to these calenders

GET THIS BOOK!

BOOKLET No. 2008. Packed with valuable information. Profusely illustrated. Write for free copy

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
8461 East 287th St., Wickliffe, Ohio

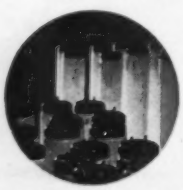
CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

For more data, write this page number on Reader-Service card. →

Ask these questions, too, when you judge a fluorescent lamp...

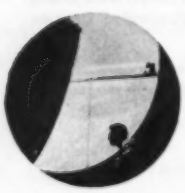
Is your investment protected?

Check Westinghouse Fluorescent Lamps against any other brands you are now using. Check them for maintained brightness, long life, uniform appearance. If you are not entirely satisfied on all counts, your full purchase price will be refunded.



Is it the correct type, size and color for the lighting job to be done?

In the Westinghouse fluorescent family of 290 different lamps—including Slimline and Rapid Start—there's a type and size precisely right for every office, plant and store application. Colors include seven different shades of "white" alone.



How about quality control?

From raw materials to finished product, every Westinghouse fluorescent lamp is subjected to *480 inspections and tests* before approval for shipment.

For the full story on how to get more for your money in fluorescent light, contact your Westinghouse Lamp Representative.

WATCH WESTINGHOUSE

*WHERE **BIG** THINGS ARE HAPPENING FOR **YOU!***

MILL MAINTENANCE

Selecting Truck Casters for Special Uses

There are two basic types of caster: (1) rigid and (2) swivel. In swivel casters, the bottom part can make a complete 360° rotation while the top section remains in a fixed mounted position.

The rigid caster, of course, does not swivel. Wheel motion is only forward or backward.

Although a large number of types of wheels may be used in casters, only about a dozen are generally regarded as standard.

Soft-rubber wheels have a tread vulcanized on a hard-composition core and are designed for use where casters must operate quietly and with minimum damage to floors and loads. They are also nonsparking and can be supplied in nonconductive rubber. The maximum load limit is about 700 lbs. for each wheel.

Wheels for Heavy Loads

Wheels with hard-rubber or fibre-composition cores are also nonsparking and are designed to protect floors. They have extremely high load capacities.

Pressed-steel wheels are made by continuously welding formed disks together. These wheels resist heavy shocks and have a load capacity of 2,000 lbs.

Steel and semisteel wheels are forged or cast in various grades of steel or iron and have capacities up to 10,000 lbs., as required.

Semipneumatic wheels have hollow-center rubber tires or treads. They're also known as cushion tires. They have load ratings generally consistent with tire and rim association standards for wheels. The rubber protects loads from shock and does not require air pressure.

Wooden wheels are constructed of hardwood wedges held together by two round steel disks. They are nonsparking and easy rolling, and they protect floors.

Aluminum-alloy wheels have steel or rubber treads and reduce the dead weight of equipment. In rubber-tread models, they are sparkproof. Steel treads have one-ton capacity.

Wheels To Protect Floors

Canvas-tread wheels have end canvas assembled in blocks and set radially on the rim. They are shock resistant, oil resistant, and noiseless.

Plastic wheels are molded from macerated solids and impregnated with phenolic resins. They are nonsparking, acid resistant, and heat resistant; and they roll easily.

Solid rubber-tired steel wheels are available with molded-on or demountable treads. They protect floors, are noiseless, and generally have load ratings consistent with tire and rim association standards for wheels.

Solid rubber-tired wheels are inserted between two heavy-gauge steel disks, which are bolted together to form the wheels. Capacities vary by the quality.

Pressed-steel disks may be periphery welded with molded-on rubber tires; again capacities vary with the quality.

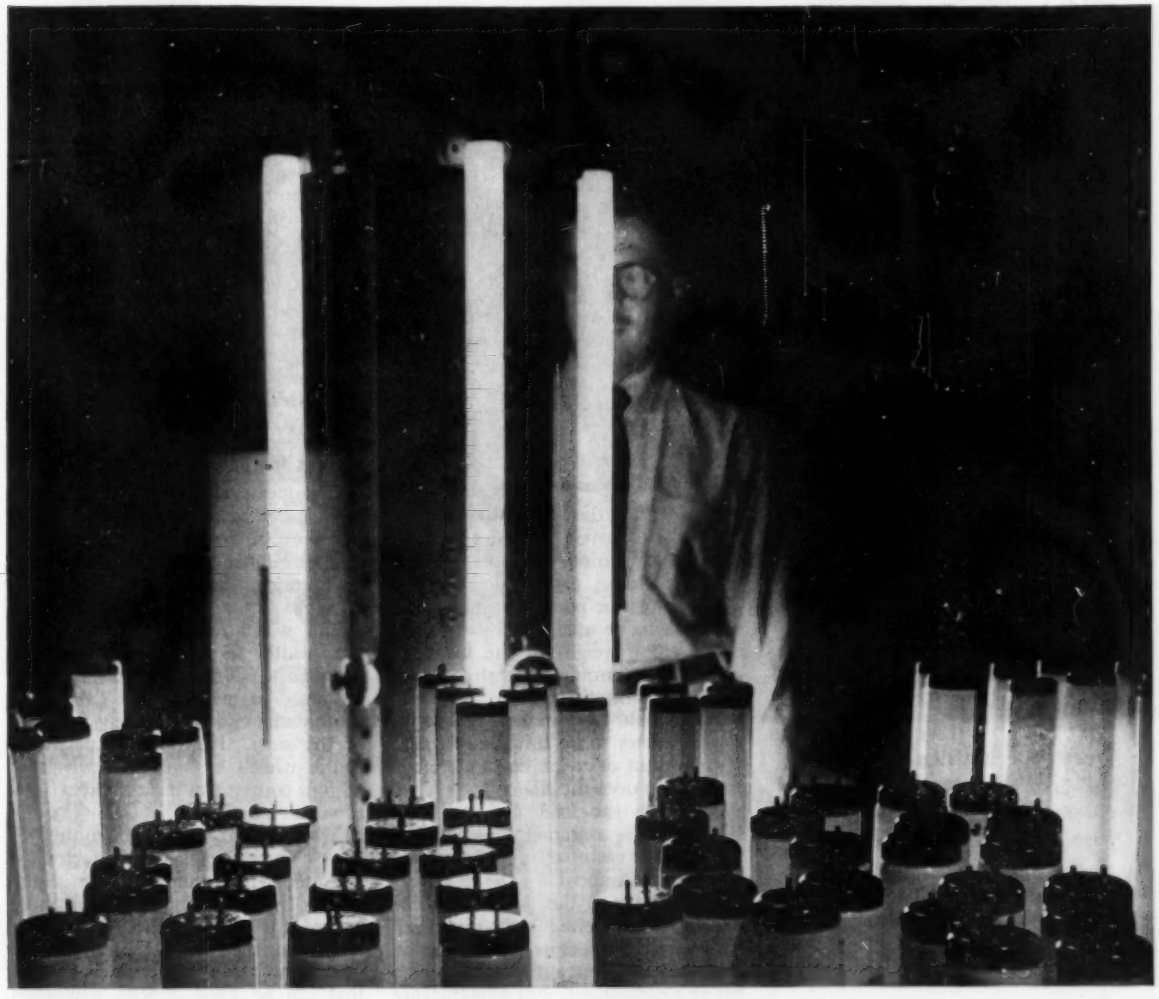
Pneumatic wheels consisting of a formed-steel rim-and-hub assembly mounted with a separate tire and tube require air pressure that is adjusted to suit the loads. They are desirable when fragile goods are handled or for operation over soft terrain.

Positioning on Platform

Casters may be positioned in several standard arrangements. They may be grouped in two main classes according to whether they cause or prevent a tilting of the platform by an up-and-down motion at either end.

With a tilting arrangement, two casters are positioned midway between the two ends. They are larger than the end casters, or they may have longer connectors between themselves and the platform. In this way, the

how to judge a fluorescent lamp . . . point no. 8



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You can be sure that the Westinghouse fluorescent lamp you buy today will exactly match the Westinghouse lamp of the same color classification you bought yesterday or years ago. Two facts guarantee it. *First*, to insure strictest uniformity, Westinghouse makes all of its own lamp phosphors, the tube-coating materials that determine lamp color. *Second*, Westinghouse (and only Westinghouse) uses "drift-free," *Halo-type* Phosphors throughout its entire fluorescent lamp line.

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JOHN H. O'NEILL, BOX 720, ATLANTA, GA.
JAMES H. CARVER, BOX 22, RUTHERFORDTON, N. C.
CRAWFORD "JACK" RHYMER, BOX 2261, GREENVILLE, S.C.

platform balances on the center units, which are always nonswiveling.

The total casters in a tilting arrangement may be four or six and may be placed either in 1-2-1 or 2-2-2 order. The end wheels may or may not be the swiveling type.

Swivels Maneuver Easily

With swiveling ends, the truck can be maneuvered while either end is resting on the floor. With nonswiveling ends, the truck must be momentarily balanced on its center wheels for steering or maneuvering.

The tilt-type arrangement also includes semilive skids, which have two wheels or nonswivel casters at one end and rigid legs at the other.

With the nontilting arrangement, fixed-position casters may be used at one end and swiveling casters at the opposite end. Using four swivel casters is equally common. Occasionally a three-wheel all-swivel tripod-type is used.

Selecting the Caster

In selecting the best style and combination of casters, consider: (1) the load to be carried; (2) operating-surface conditions; (3) speeds of operation, manual or powered; and (4) the platform to be used.

The total weight of the load and platform determines the strength to be required in the casters. The load factor should also include allowance for any shock to be sustained in placing the load or to be encountered in movement over the floors.

Whether the load can be safely tilted may be a second consideration. Liquids, for example, might require a nontilt arrangement.

The distance the load is to be hauled and steering and maneuverability are also factors to consider in choosing between a tilting and nontilting arrangement. For long-distance movement, steering is easier with nontilting trucks. But for simple adjustments of position and for sharp turns in narrow aisles, a tilting model has advantages.

Distribute Load Evenly

Distribution of load pressure is another important factor in some instances. If the load is heavy at the corner of the steering end, for example, a swivel caster at each corner of this end may be needed. Distribution of load pressure may also indicate whether caster arrangement should be in a 2-2, 1-2-1, or 2-2-2 pattern.

Load considerations also influence the choice of casters and their arrangement. The width of wheel treads should be correlated to the load. On heavy loads, the tread should be wider and the diameter should be larger.

The condition of the floors is also important in selecting the size of casters. On rough floors and steep inclines, use large wheels. Use wide cushion treads on soft floors; use this same tread on floors that are easily damaged.

Casters for Special Jobs

For operations in areas where there is excessive grease, metal chips, travelers, or other substances that may damage rubber or composition materials, steel or other similar wheels must be used.

The width of aisles in relation to the width of the truck platform should also influence a choice. If side clearance is small, a truck that steers at only one end is less likely to bump at the sides. However a truck with center wheels or one that swivels at all four corners can make shorter turns at an intersection.

The amount of speed required is also a major mechanical factor to consider. Here, the basic rule is: the greater the speed, the larger and more rugged the caster. Also, the higher the speed, the greater the importance of choosing a steering arrangement that can be handled with maximum ease, accuracy, and safety. *Edward L. Lee, Caster & Floor Truck Manufacturers Assn.*

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 214

of 8 ins. and a vertical lift of 18 ins. They can handle coils weighing up to 4,000 lbs. with diameters up to 48 ins.

Circle T-69 on Reader-Service Card

Phasemeter and Plotter

A phasemeter and a plotter developed by Hastings Instrument Co., Hampton, Va., incorporates compactness and light weight with increased signal strength and accuracy.

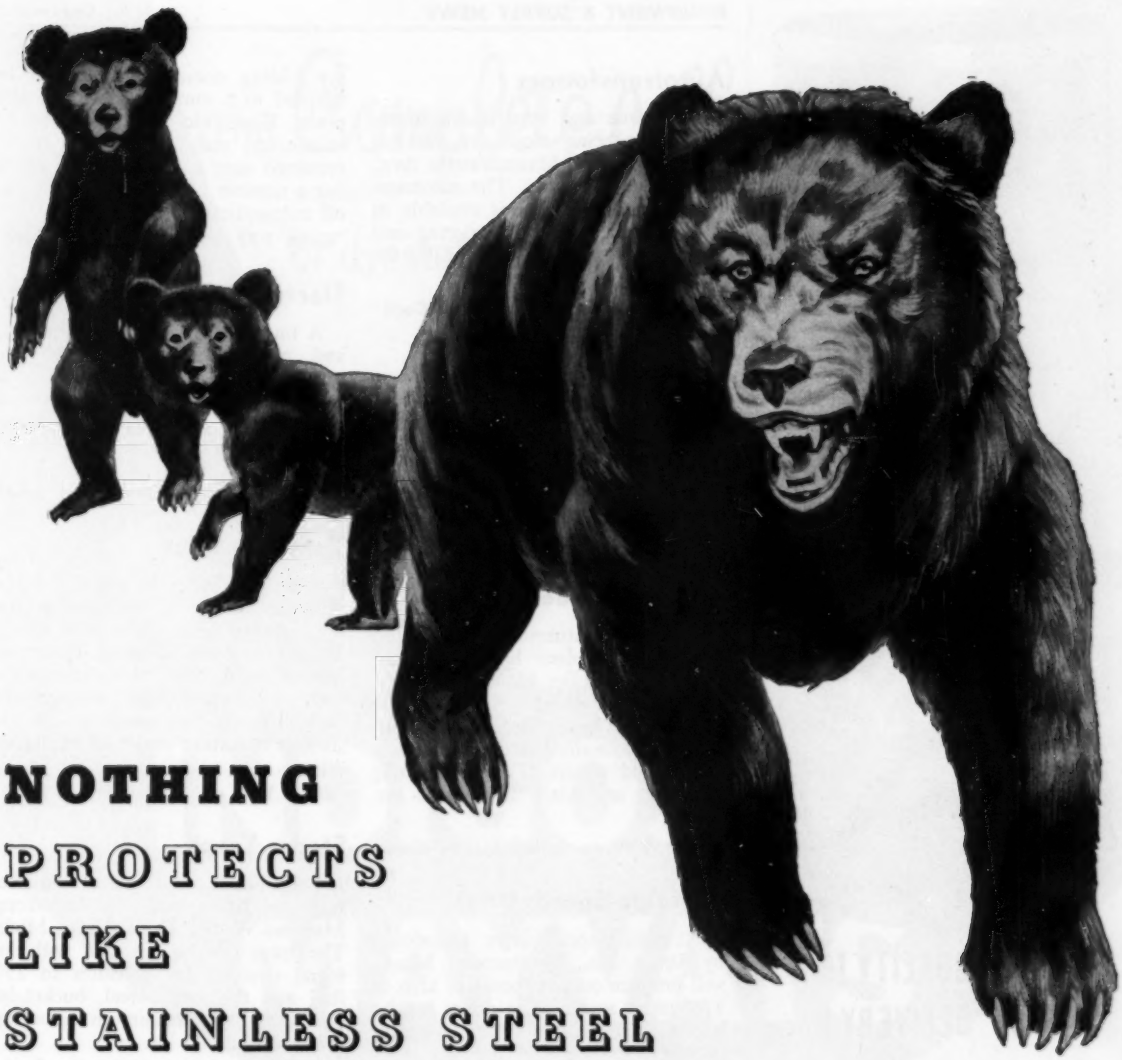
Circle T-70 on Reader-Service Card

Proximity Relay

A relay that is activated by the proximity of movable material has been announced by Excel Electric Service Co., 2113 S. Western Ave., Chicago 8, Ill. The unit will control the level of liquids, granular, or solid objects to within a fraction of an inch.

Circle T-71 on Reader-Service Card

CONTINUED ON PAGE 222



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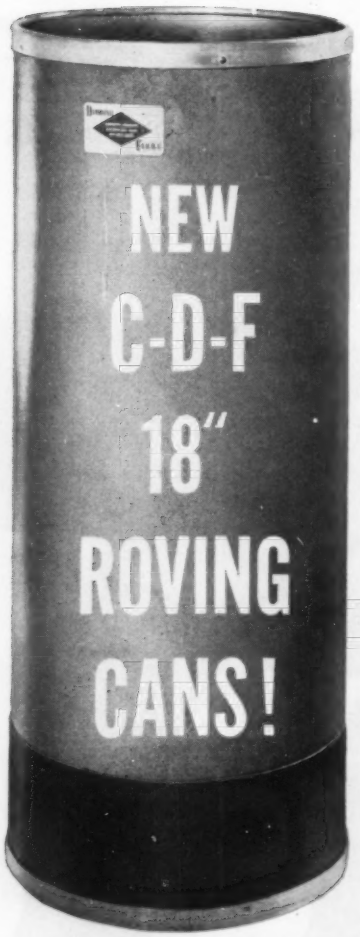

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Autotransformer

A flexible and versatile autotransformer is being made by General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass. The autotransformer, called Variac, is available in a number of models. Two-gang and three-gang assemblies are available for 115-v. and 230-v. operation.

Circle T-72 on Reader-Service Card

Dragline Cart

An overhead dragline cart has been announced by Lewis-Shepard Products, Inc., Watertown, Mass. This cart features a telescopic mast with handle controls for engaging and disengaging the dragline.

Circle T-73 on Reader-Service Card

Power Cylinders

Improved features for its air and hydraulic cylinders have been announced by Miller Fluid Power Co., 2040 N. Hawthorne Ave., Melrose Park, Ill. These features are: case-hardened chrome-plated piston rods, Teflon rod wipers, Teflon hydraulic rod seals, and black ferric-oxide surfaces.

Circle T-74 on Reader-Service Card

Variable-Speed Drive

A variable-speed drive introduced by Revco, Inc., Minneapolis, Minn., will produce output speeds of zero to ¼ of input speed. The drives can be had with or without reverse gear or gear-head reduction in sizes for 1/40- to ¾-hp. motors.

Circle T-75 on Reader-Service Card

Electric Drum Heater

A heating jacket that can be snapped on any standard 5-gal. drum is offered by Pre-Fab Heater Co., Inc., Guilford, Conn. Low, uniform temperature is provided to warm the contents of the drums. An insulating glass-fiber blanket is recommended to speed up results. The heaters are rated at 300 w., 115 v. and produce up to 140° F. at drum surface.

Circle T-76 on Reader-Service Card

Coated-Fabric Cutter

A machine that will automatically cut, convey, and stack coated fabrics has been marketed by Hobbs Mfg. Co., 26 Salisbury St., Worcester, Mass. Designed primarily to cut vinyl fabrics for folding doors, the unit can be adapted to a number of related purposes. Electronic controls can be set to measure and cut fabric to predetermined sizes and can also be set to cut a number of pieces and then cut off automatically.

Circle T-77 on Reader-Service Card

Electronic Recorder

A line of recording millivoltmeters and microammeters has been announced by Manning, Maxwell, & Moore, Inc., Stratford, Conn. Recording on a 3-in.-wide chart, the recorder requires panel space of less than 25 sq. ins.

Circle T-78 on Reader-Service Card

Tension Meter

A tension meter to safely measure tensions up to 20 lbs. during the processing of wires, cables, coils, cords, etc. has been announced by Tensitron, Inc., Howard, Mass. A feature of the meter is a lever-and-helix arrangement that replaces gear trains to provide smooth operation under all mill conditions.

Circle T-79 on Reader-Service Card

Steam Traps

Forged-steel and cast semisteel traps are being made by Armstrong Machine Works, Three Rivers, Mich. The traps can be obtained with integral strainers for pressures to 250 lbs.; and the forged-steel, bucket-design trap has a maximum operating pressure of 2,500 lbs.

Circle T-80 on Reader-Service Card

Solenoid Valve

A double-solenoid, pilot-operated four-way valve has been announced by Valvair Corp., 454 Morgan Ave., Akron 11, Ohio. Called the Speed King, the valves are available in ¼-, ⅜-, ½-, ¾-, and 1-in. pipe sizes. Pressure ranges in pounds per square inch are: 35 to 200 air and 35 to 125 hydraulic oil for both single- and double-solenoid valves.

Circle T-81 on Reader-Service Card

Lift Truck

Several new features are made in a redesigned lift truck that straddles the carried load. The truck, Series 71, built by Clark Equipment Co., Ross Carrier Div., Benton Harbor, Mich., has a rated capacity of 10,000 lbs.

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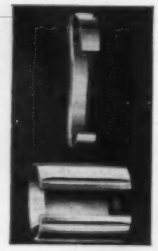

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CALENDAR

October

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 1 to 5.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Oct. 3.

Chemical Finishing Conference, National Cotton Council of America, Hotel Statler, Washington, D. C., October 3 & 4.

AATCC, Piedmont Sect., annual meeting, Charlotte Hotel, Charlotte, N. C., Oct. 6.

North Carolina Textile Manufacturers Association, annual meeting, The Carolina Hotel, Pinehurst, N. C., Oct. 10 to 12.

STA, Eastern Carolina Div., N. C. State College, School of Textiles, Raleigh, N. C., Oct. 13.

Protective Packaging & Materials Handling Exposition, Kiel Auditorium, St. Louis, Mo., Oct. 21 to 24.

Carded Yarn Assn., annual meeting, Hotel Fort Sumter, Charleston, S. C., Oct. 24 & 25.

STA, Piedmont Div., North Carolina Vocational Textile School, Belmont, N. C., Oct. 27.

Alabama TOE, fall meeting, Thach Auditorium, Auburn, Ala., Oct. 27.

November

South Carolina Textile Manufacturers Association, Personnel Div., Ocean Forest Hotel, Myrtle Beach, S. C., Nov. 1 & 2.

AIEE, Fall Textile Conference, North Carolina State College, Raleigh, N. C., Nov. 1 & 2.

STA, North Carolina Div., Clemson House, Clemson, S. C., Nov. 3.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Nov. 7.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Nov. 16.

22nd National Exposition of Power and Mechanical Engineering, New York Coliseum, New York, N. Y., Nov. 26 to 30.

December

AATCC, Northern New England Sect., annual meeting, Hotel Vendome, Boston, Mass., Dec. 1.

AATCC, South Central Sect., Hotel Patten, Chattanooga, Tenn., Dec. 1.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Dec. 5.

AATCC, Southeastern Sect., Atlanta, Ga., Dec. 8.

1957

January

National Cotton Council of America, annual meeting, St. Louis, Mo., Jan. 28 & 29.

Plant Maintenance & Engineering Show, Public Auditorium, Cleveland, Ohio, Jan. 28 to 31.

February

Cotton Research Clinic, National Cotton Council of America, General Oglethorpe Hotel, Savannah, Ga., Feb. 27 to March 1.

April

American Cotton Manufacturers Institute, annual convention, Palm Beach Biltmore Hotel, Palm Beach, Fla., April 4 to 6, 1957.

National Packaging Conference and Exposition, sponsored by American Management Association, International Amphitheatre, Chicago, Ill., April 8 to 11.

Alabama Cotton Manufacturers Association, 56th Anniversary Meeting, Buena Vista Hotel, Biloxi, Miss., April 10 to 12.

The Underwear Institute, annual meeting, Hotel Traymore, Atlantic City, N. J., April 29.

Knitting Arts Exhibition, Convention Hall, Atlantic City, N. J., April 29 to May 3.

May

The Fiber Society, spring meeting, Clemson House, Clemson, S. C., May 1 & 2.

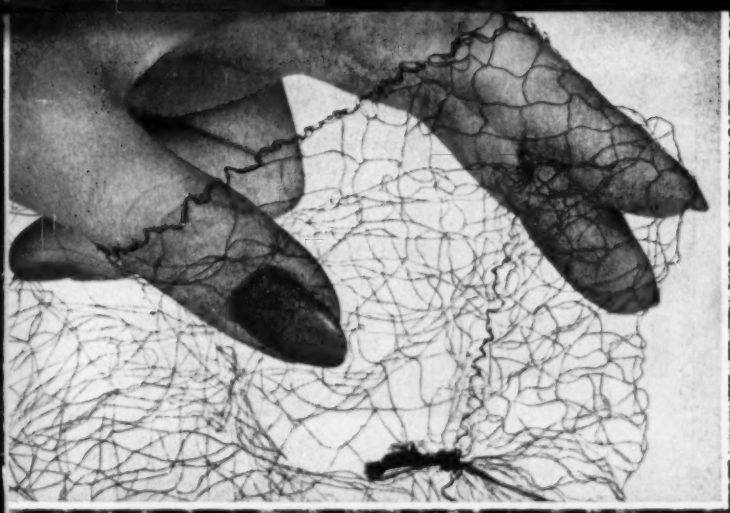
Cotton Manufacturers Association of Georgia, annual convention, Emerald Beach Hotel, Nassau, Bahama Islands, May 1 to 4.

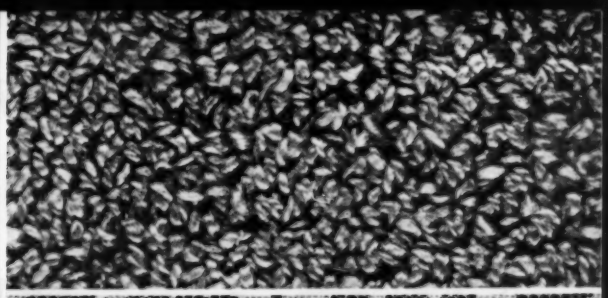
June

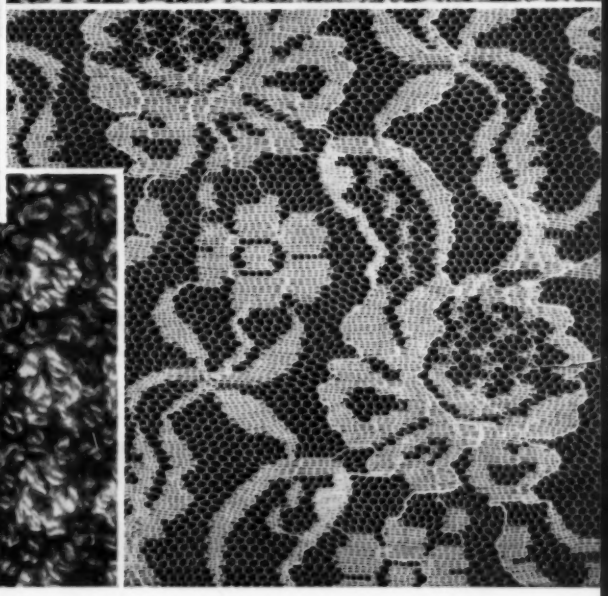
Southern Textile Association, annual convention, Ocean Forest Hotel, Myrtle Beach, S. C., June 20 to 22.

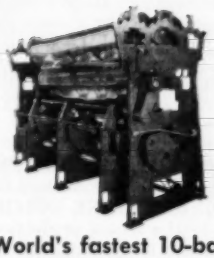
October

Plant Layout Technical Workshop, Greater Pittsburgh Airport Hotel, Pittsburgh, Pa., Oct. 15 to 19.









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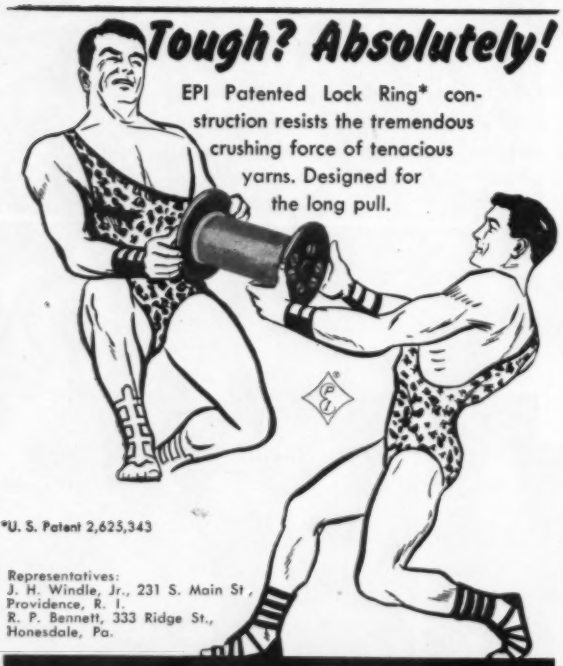
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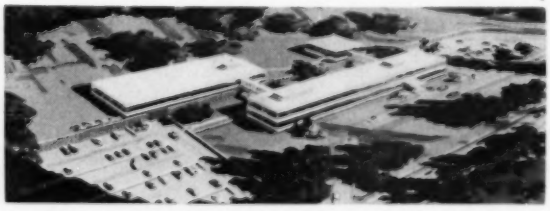
NEWS about SUPPLIERS

ABERFOYLE MFG. CO., Philadelphia, Pa.—Has arranged with Oscar Heineman Corp., Philadelphia, to handle the sale of Ban-Lon to knitters and weavers here and abroad. . . . **ALLIANCE CHEMICAL CORP.**, Newark, N. J.—Has named John A. Harley New England sales representative. . . . **AMERICAN CYANAMID CO.**, New York, N. Y.—Will build a plant near Pensacola, Fla., for the production of Creslan. Alden R. Loosli has been appointed general manager of the new division. Other appointments are: W. L. Lyall, sales manager; C. W. Bendigo, technical director; N. H. Marsh, manager of the Florida plant. . . . **AMERICAN RIETER CO.**, Arlington, N. J.—Is building a new unit in West Caldwell, N. J., for maintenance and spare-parts service. . . . **AMERICAN VISCOSE CORP.**, Philadelphia, Pa.—Has transferred J. Raymond Murphy, Jr., to the New York, N. Y., office of the Fiber Sales Dept..

BENTLEY KNITTING MACHINERY ORGANIZATION, INC., Providence, R. I.—Has opened a new office in the Liberty Life Building, Charlotte, N. C. . . . **BERKSHIRE COLOR & CHEMICAL CO.**, Delawanna, N. J.—Has started production in the former Bick Chemical Corp. plant in Reading, Pa. . . . **BENJAMIN BOOTH CO.**, Philadelphia, Pa.—Has named the Crysler Co., North Chelmsford, Mass., as its New England representative. . . . **BORDEN CO., CHEMICAL DIV.**, New York, N. Y.—Has purchased the Pioneer Latex & Chemical Co., Middlesex, N. J. . . . **CHEMSTRAND CORP.**, Decatur, Ala.—Has named Charles W. Carvin, Jr., assistant nylon sales manager.

DEWEY & ALMY CHEMICAL CO., Cambridge, Mass.—Has named William Morton as Midwest regional sales manager of organic chemicals. Floyd E. Witzel has also been named to the Midwest territory. John G. Broughton has been named Eastern sales manager. Charles Neumhoffer has been transferred to the Houston, Texas, office. . . . **DODGE MFG. CORP.**, Mishawaka, Ind.—Has named Carlton Shamo as supervisor of publicity. . . . **E. I. DU PONT DE NEMOURS & CO., INC.**, Wilmington, Del.—Is building an addition to its Kinston, N. C., plant to increase the staple spinning capacity of Dacron. . . . **EMERY INDUSTRIES, INC.**, Cincinnati, Ohio—Has named Robert H. Dhonau and Arthur B. McDermott to the staff of the Development and Service Dept. Robert F. Connelly has been named to the sales staff of the Organic Chemical Sales Dept. on the West Coast.



GEIGY CHEMICAL CORP., New York, N. Y., is moving its New York headquarters to this new building on Saw Mill River Road, Ardsley, N. Y.

DOW

"Locked in the Versene claw"—that's the fate of metal ions when they encounter chelation. They become trapped within the inner ring structure of a newly formed compound where they cannot hinder processing or mar product quality. This phrase is taking on new meaning for the textile industry, as the chemistry of chelation is reviewed.

The Chemistry of Chelation: Part IV

Applications in the textile industry · Kier boiling · Scouring Peroxide bleaching · Dyeing · A new kind of chemistry?

As has been discussed previously, the Versene® series and Versenol® series chelating agents will inactivate practically all metallic ions they contact in solution. The pH factor of the solution or of the finished product influences the choice of agent. To control iron in caustic solutions, look to Versene T®; in alkaline solutions—Versene Fe-3 Specific®; in acid—the Versene series. Or if solutions drift from one pH value to another, an effective Versene combination can be devised. It is important to remember that the Versenes remain stable and maintain effectiveness in alkaline media and at high temperatures. And, in complexing metal ions, they actually form new compounds that cannot be precipitated by common agents. The result is maximum ion-contamination control.

KIER BOILING

The kier-boiling or cotton saturator step is very important in cotton processing. This operation removes contaminants which, if allowed to remain on the fabric, have a serious effect upon subsequent finishing operations. Of these contaminants, metal ions—notably those of iron, calcium, and magnesium—are a frequently overlooked source of trouble. The difficulties associated with such ions are numerous, including iron staining, poor bleachability, pinholes, tenderizing, and poor dyeing; hence, it is important that the ions be inactivated.

Where stainless kiers or saturators are used, Versene T provides the ideal answer to problems covered by metallic ions. The chelating solution is simply added to the caustic kier-boiling solution. With cement-lined kiers, Versene S is substituted for Versene T. Versene S does not chelate alkaline-earth metals, hence will not harm the kier lining. When it is used, therefore, calcium and magnesium salts must be neutralized with Versene or Versenol in subsequent operations.

Versene T may be used to clean accumulated deposits of scale and rust from kier surface by making a blank run with a Versene caustic solution.

SCOURING

In the finishing of other types of goods, the scouring operation has a similar function and the same importance as the kier-boiling of cotton goods. Since the scouring operation is carried out at neutral or mildly alkaline pH's, Versene, Versene Fe-3 or Versenol is ordinarily used to provide the necessary complete metal ion control. It may be added to either the scouring soap or the scouring rinse water.

PEROXIDE BLEACHING

Rigid control of metal ions is likewise very necessary during the bleaching step. If iron is present in the system, it catalyzes the decomposition of even silicate-stabilized bleach. As a result, the cloth may be partially degraded to oxy-cellulose; then its tensile strength is lowered and pinholing may occur. If adequate control of metal ions has been achieved in kier-boiling or scouring operations, only minimal quantities of Versene are required in the bleach step to provide control of new contamination introduced in textile-processing chemicals and plant water. The advantages obtained through the use of Versene include whiter, stronger fabrics and lower bleaching costs. Silica deposition on equipment is inhibited or eliminated.

DYEING

If good metal-ion control has been achieved in previous finishing operations, the cloth will be in excellent condition for dyeing. If such ions are present, however, they may react with the dyestuff molecules to produce compounds different from the original dyestuff. When this happens off-color dyeing, uneven dyeing, crocking, and precipitation of dyestuffs can take place. There problems can be overcome by adding Versene or Versenol in the dye bath and soap-off bath.

A NEW KIND OF CHEMISTRY?

Is chelation the answer to all ion-contamination difficulties? Despite its many successful applications, the answer is sometimes "no". For, remarkable as it is—in locking up metal ions to improve processing and product quality—chelation does not solve all problems in every application. But wherever metal ions do pose a problem, investigation is worth while. And we'll help in every possible way. To see if you can put the Versene or Versenol products to profitable use, write Technical Service and Development, Dept. SC 908K-1, THE DOW CHEMICAL COMPANY, Midland, Mich.

you can depend on DOW CHEMICALS DOW

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FLETCHER WORKS, Philadelphia, Pa.–Has named Jack Harrison to direct sales in Philadelphia and the South. . . . **GENERAL ELECTRIC CO.,** Plainville, Conn.–Has changed the name of Trumbull Components Dept. to the Circuit Protective Devices Dept. . . . **GRATON & KNIGHT CO.,** Worcester, Mass.–Has transferred its major assets to Aetna Industrial Corp., New York, N. Y. This sale does not include the company's subsidiary, International Packings Corp., Bristol, N. H. . . . **HILTON-DAVIS CHEMICAL CO.,** Cincinnati, Ohio–Has named Edward J. Britton technical sales representative . . . . **HUNGERFORD & TERRY, INC.,** Clayton, N. J.–Has named Edward H. Aldworth its sales representative in Fort Lauderdale, Fla. North-Monsen Co., Salt Lake City, Utah, has been named as representative in the Rocky Mountain area. . . . **HYSTER CO.,** Portland, Ore.–Has named Jack A. Cairns supervisor of advertising and promotion for the Industrial Truck Div. Richard M. Ervin has been promoted to manager of the company's Washington, D. C., office.

W. H. KIECKHEFER (left) has been named sales manager of the Wheelco Instruments Div., Barber-Colman Co., Rockford, Ill. NEIKO I. VASSILEFF (center) has been named representative in Northern Ohio for Refined Products Corp., Industrial Div., Lyndhurst, N. J. DR. JOHN E. WARD (right) has been named to head all development of product research programs for the industrial divisions of Nopco Chemical Co., Harrison, N. J.

R. J. CHRIST (left) has been named sales manager on the West Coast for the Dobeckmun Co., Industrial Div., Cleveland, Ohio. JAMES W. PERRY (center) has been named industrial application engineer for Vickers, Inc., in the Chicago, Ill., office. DR. BRUNO H. WOJCIK (right) has been named manager of research and development for the Olin Mathieson Chemical Corp., Industrial Chemicals Div., New York, N. Y.

KOPPERS CO., INC., TAR PRODUCTS DIV., Pittsburgh, Pa.–Has named F. M. Smith general manager. . . . **H. F. LIVERMORE CORP.,** Boston, Mass.–Has purchased J. Banks & Son, Lowell, Mass. . . . **NATIONAL ADHESIVES DIV.,** NA-

The Flexible Factor

CROMPTON RICHMOND COMPANY INCORPORATED FACTORS

Our large factoring volume was earned by the ability to serve a wide variety of firms in a diverse number of fields. In other words, we factor a client to best serve his individual requirements. This assures him a high degree of efficiency and flexibility. It also makes available a vast amount of business and credit information from many fields beyond his own. The last is very important, because receivables, more often than not, leave a record of their buying and paying habits in many fields far removed from your own.

Crompton Factoring releases your capital tied up in receivables by turning them into cash as soon as you ship and as long as you ship . . . without recourse. From then on, we pick up the ball.

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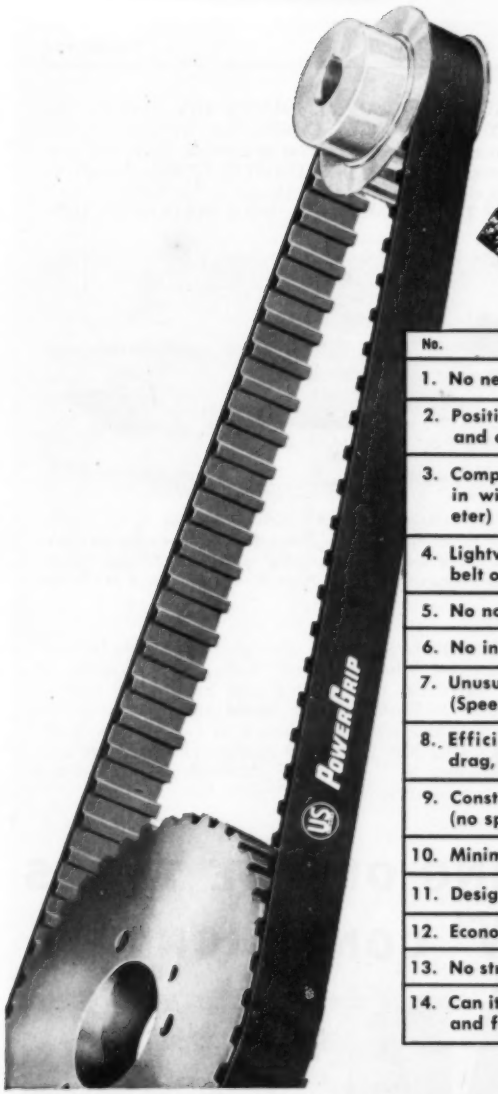

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No. Advantages	PowerGrip "Timing" Belt	Chain	Gear	V-Belts	Flat Belts
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5. No noise or vibration	√				
6. No initial tension	√				
7. Unusual speed range (Speeds up to 12,000 FPM)	√				
8. Efficient (Elim. heat, lube drag, high bearing loads)	√				
9. Constant angular velocity (no speed fluctuation)	√				
10. Minimum backlash	√				
11. Design flexibility	√				
12. Economical	√				
13. No stretch	√				
14. Can it be completely housed and forgotten?	√				

Note that the U. S. PowerGrip "Timing" Belt takes a "√" after every advantage

While every type of drive has certain advantages, *no* type of power transmission possesses *so many* advantages as the U.S. PowerGrip "Timing" Belt drive. For example, *it is the only positive drive that never needs lubrication.*

THE LIST OF USES GROWS DAY BY DAY! Power production machinery in every field is made more efficient, volume of production increased, and maintenance costs lowered with this amazing belt. The list of OEM applications grows too numerous to mention. U.S. PowerGrip has streamlined hundreds of products... made them sell above competition. Some equipment would not be in existence at all, if it weren't for this great belt.

U. S. PowerGrip "Timing" Belt drives—from flea-power to 1000 h.p., and with ratios up to 12 to 1—are obtainable at any of the 28 "U. S." District Sales Offices, at selected "U. S." distributors, or by contacting us at Rockefeller Center, New York 20, New York. In Canada, Dominion Rubber Co., Ltd.

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Mechanical Goods Division

United States Rubber

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TIONAL STARCH PRODUCTS, INC., New York, N. Y.—Is consolidating the operations of the Adhesives Technical Service Dept. and the Adhesive Development Dept., under the supervision of Ralph C. McGaffin. . . . **SINCLAIR CHEMICALS, INC.,** New York, N. Y.—Has named Elwyn C. Weiss and Maurice E. Peterson sales representatives in the Nitrogen Products

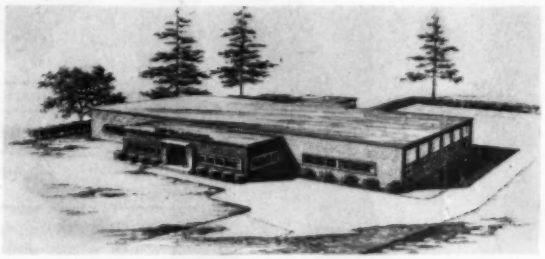
B. R. STRATTON (left) has been named manager of the Atlanta, Ga., office of Cutler-Hammer, Inc., ELMER K. STILBERT (center) has been named staff manager of coating materials for Dow Chemical Co., Plastics Dept., Midland, Mich. ARTHUR E. YOUNG (right) has been named manager of Dow Chemical Co.'s new Textile Fibers Dept.

Div. . . . **A. E. STALEY MFG. CO.,** Decatur, Ill.—Has named David T. Mitchell superintendent of the oil-refinery section.

STANLEY WORKS, New Britain, Conn.—Is building a new plant that will double the company's present production of steel strapping. . . . **THERMOID CO.,** Trenton, N. J.—Has named Martin H. Gurley, Jr., general manager of the textile division. . . . **USTER CORP.,** Charlotte, N. C.—Has named Robert L. Duckett service engineer in the Testing Equipment Dept. . . .

WESTVACO MINERAL PRODUCTS DIV., FOOD MACHINERY & CHEMICAL CORP., New York, N. Y.—Has named Howard C. Peterson assistant in technical service for phosphate chemicals. . . . **WORTHINGTON CORP.,** New York, N. Y.—Has elected Walther H. Feldmann to the board.

YALE & TOWNE MFG. CO., YALE MATERIALS HANDLING DIV., Philadelphia, Pa.—Has created a separate Delivery-Order Entry and Scheduling Dept. under the managership of Charles C. Myslinski. Eric B. Insley has been named manager and James N. McEntee has been named sales manager of the newly created sales and service branch in Los Angeles, Calif. Richard C. Slater has been named assistant gas-truck sales manager in Syracuse, N. Y. Walter S. Maranuk has been named manager of sales and service in Pittsburgh, Pa.



MARSHALL & WILLIAMS SOUTHERN CORP., Greenville, S. C., is building this new 15,000-sq.-ft. plant in Greenville, S. C. The company's sales and service headquarters, manufacturing facilities, and repair departments formerly located at 121 Welborn St. will be located in the new building.

COTTON YARN CONDITIONING ON DYE TUBES AND CONES IN THE "H-W" CONDITIONER

Conditioned dye tubes assure more uniform cones.

"H-W" Trademark Reg. U.S. Pat. Off.

Conditioned dyed cotton yarn on cones assures smooth running, high loft yarn.

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Our representative will be glad to call at your convenience.

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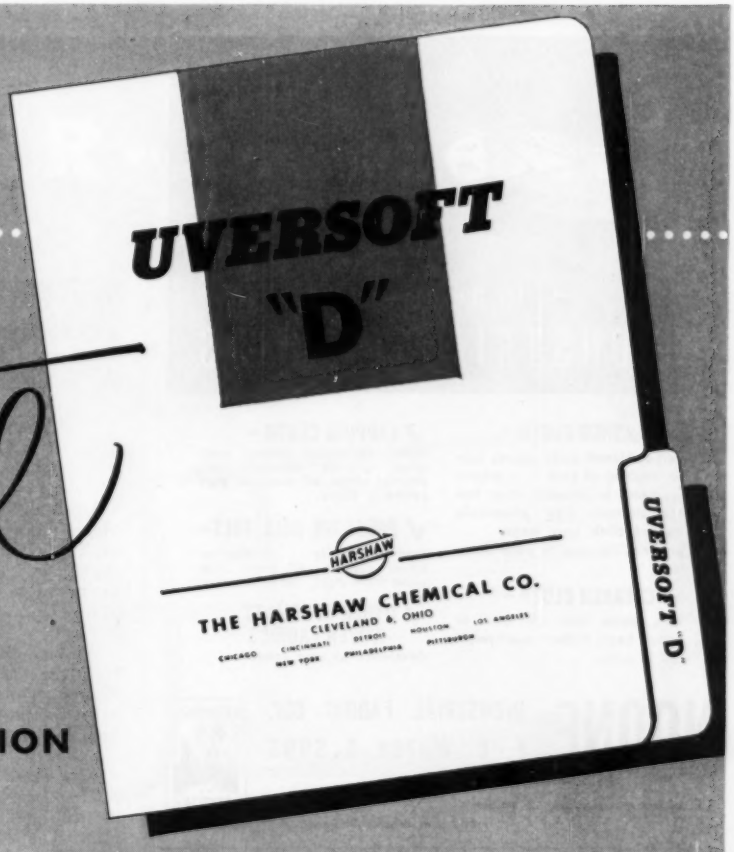

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UVERSOFT "D" is a cationic surface active agent which produces a full, soft hand with little, if any, reduction in moisture absorbency of the TREATED material. It can be exhausted from a long bath, and has an excellent retention in an aqueous system. UVERSOFT "D" provides a maximum economy in application and use.

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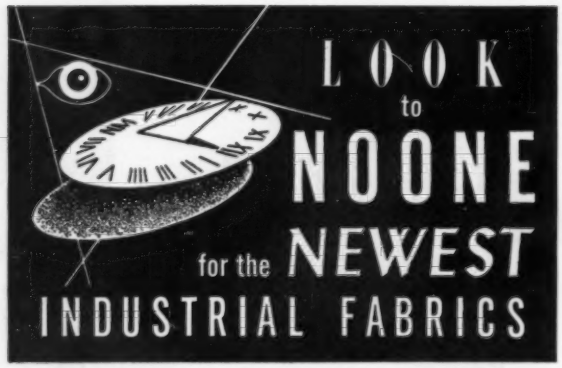

✓ **SLASHER CLOTH** — well-cushioned body assures better slashing of yarn . . . greater resistance to abrasion. High tensile strength. New chemically treated cloth lasts longer . . . provides top quality warp dressing.

✓ **CLEARER CLOTH** — firm, dense nap; all wool or cotton back; highest quality—yet low in price.

✓ **LAPPING CLOTH** — newly developed cotton warp gives greater strength, less stretch; either all wool, or part synthetic filling.

✓ **PRESSURE ROLL FELT** — long service life . . . lasting resilient cushion. All wool. Supplied from stock, cut to required width.

✓ **OTHER SPECIALTY WOVEN FABRICS** — developed at your request.

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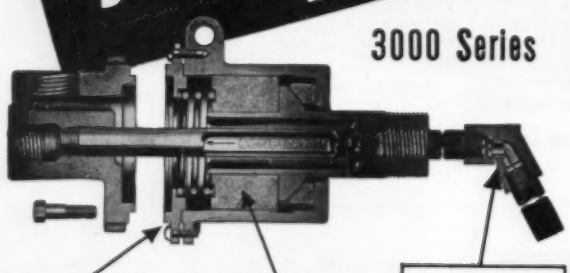
KENWOOD TEXTILE PRODUCTS

Johnson Joint with SYPHON ELBOW
3000 Series



ASSEMBLY PLATE — Holds internal parts in position when head is removed.

SELF-SUPPORTING — Needs no external supports of any kind.

SYPHON ELBOW — Permits use of straight pipe for syphon. Can be inserted or withdrawn right through the joint.

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on this Series 3000 Johnson Joint and the syphon elbow. Remember Johnson Joints have written an unmatched service record . . . are first choice among mill men and machinery makers alike . . . and can fit all operating needs.

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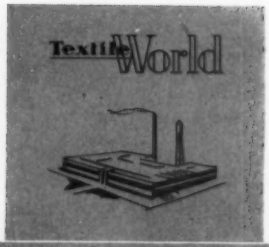


NEWS about MILLS

COTTON MILLS

American & Efird Mills, Inc., Mount Holly, N. C., is moving its Thread Div. general sales offices from Lawrenceburg, Ky., to the company's general offices in Mt. Holly.

Bender Bros., Camden, N. J., has purchased automatic-weighing tandem card feeds for its nonwoven fabrics operation from W. D. Dodenhoff Co.

Cone Mills Corp., Carlisle, S. C., is nearing completion of its new finishing and printing plant. The new plant contains 660,000 sq. ft. of floor space. About 700 persons will be employed.

Leward Cotton Mills, Inc., Worthville, N. C., is modernizing its opening room. New equipment ordered from Whitin Machine Works includes two Axi-Feed blenders, three blending feeders, one Axi-Flo cleaner, one overhead condenser, and one Rakehead-type distributor. A lap conveyor system has also been purchased. An additional 1,200 sq. ft. of floor space is being added to the picker room.

Linn Mills Co., Landis, N. C., will install 32 deliveries of Whitin Model M Even-Draft drawing frames, nine Whitin Superflex spinning frames, and 10 Whitin Model J combers. The installation of this new equipment is part of the company's program of modernization and expansion.

Malden Spinning & Dyeing Co., Malden, Mass., has started operations in the former Arlington Mills, Mill 23, Lawrence, Mass.

Mount Vernon-Woodberry Mills, Baltimore, Md., has purchased Newnan Cotton Mills, Newnan, Ga. No changes are planned in Newnan's present operations.

Pacolet Mfg. Co., New Holland, Ga., has completed its new warehouse. The cost was $170,000.

Sterling Cotton Mills, Franklinton, N. C., has ordered 32 deliveries of Whitin Model M Even-Draft drawing frames. The company is also replacing its present drafting system with Whitin Super-Draft and its roving frames with Saco-Lowell J-3 10x5 frames.

Waverly Mills, Inc., Waverly Plant, Laurinburg, N. C., is installing 32 deliveries of Whitin Model M Even-Draft drawing. The company is also converting 34 Model A spinning frames to Whitin Super-Draft. The installation of new equipment is part of the company's continuing modernization program.

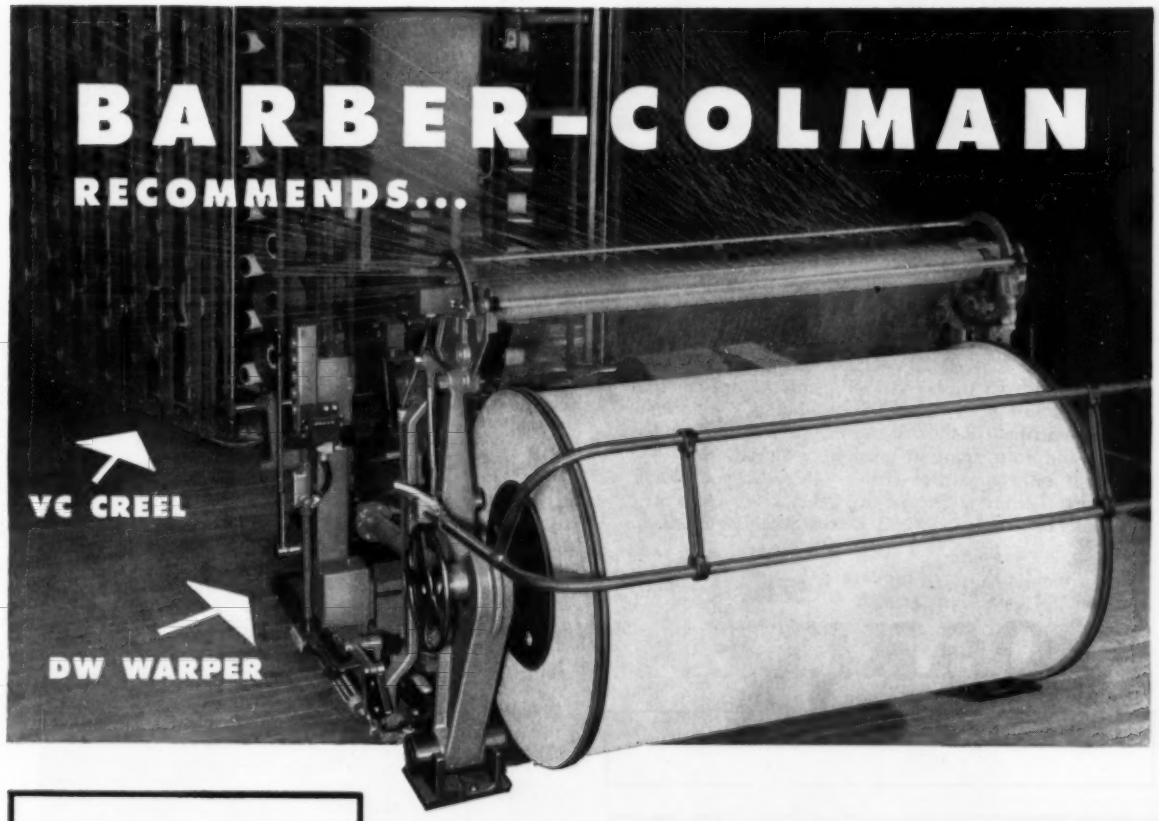
Wellington Mills, Inc., Gluck Mill Div., Anderson, S. C., has purchased seven Whitin spinning frames, Model F2.

West Point Mfg. Co., Lanuck Div., Fairfax, Ala., recently purchased Dodenhoff automatic-weighing tandem card feeds for its nonwoven-fabrics operation.

WOOLEN AND WORSTED MILLS

Halifax Mills, Halifax, Va., is building a 50,000-sq.-ft. addition to its plant.

Pendleton Woolen Mills, Pendleton, Ore., has purchased the former Foundation Wor-



FEATURES OF THE NEW "DW" WARPER

CAPACITY. The "DW" Super-Speed Warper will wind beams up to 40" head diameter. All types of beams up to this size can be accommodated.

LET-OFF MECHANISM. In order to insure uniform pressure on the driving drum as the beam builds up, a new let-off mechanism has been developed. This permits extremely accurate automatic gaging and maintenance of pressure, and consequent uniformity of the beam.

DOFFING. A power-operated built-in doffing mechanism helps to reduce down time to a minimum and saves effort substantially. Sturdy arms, which support the beam, pivot outward to set the beam on floor or truck as desired.

PUT A NEW "DW" WARPER

IN FRONT OF YOUR PRESENT

"VC" CREEL

It is perfectly possible to do this, and the added advantages of lower cost and greater productivity can make the investment a profitable one. Gains come in several ways — larger beams can be wound, the beams are of greater uniformity throughout, and doffing is much easier. The new "DW" Super-Speed Warper is a little deeper from front to back, since the driving drum, clutch, brake, and motor are now arranged back of, rather than underneath, the beam. With this re-arrangement, valuable improvements have been made in many important elements of the drive and controls. We suggest you discuss the possibilities for *your* mill with your Barber-Colman representative at the next opportunity.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

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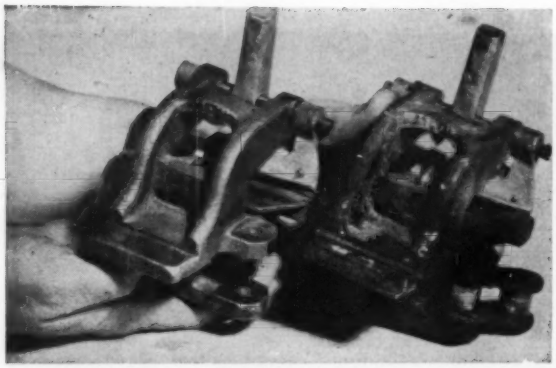

CLEANING TENTER CHAINS? Look at this — two links from the same chain, but the one on the left has just been cleaned in a boiling solution of Oakite Stripper R-6. All oil, grease, and lint soaked off—and no scraping or brushing required.
Try it on your tenter chains. Just ask your local Oakite Technical Service Representative, or write, Oakite Products, Inc., 26C Rector St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
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MATERIALS • METHODS • SERVICE

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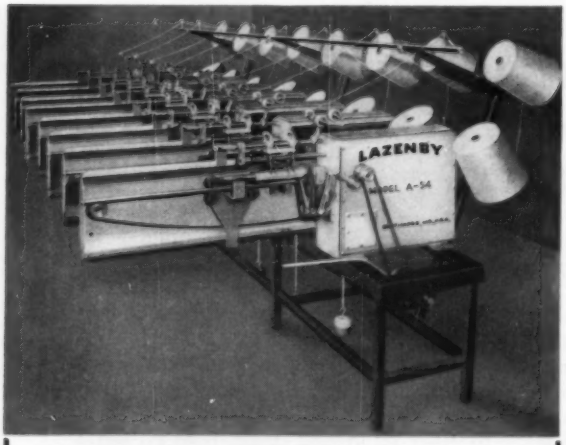

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Labor saving (80%) • High production • Easy Changeover • Quick adjustment • Dial control • Precision in manufacture for long life • Timken bearing equipped

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The F. A. LAZENBY Company

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sted Mills in Portland. New machinery has been ordered for the spinning and weaving of Pendleton fabrics. The plant is expected to start production by the end of the year. Frank Learned will be in charge of operations at the mill.

Star Woolen Co., Cohoes, N. Y., has purchased Dodenhoff automatic-weighing tandem card feeds for its nonwoven-fabrics operation.

KNITTING MILLS

Austin Knitting Mills, Inc., Albemarle, N. C., has opened a new finishing plant that contains 15,000 sq. ft. of floor space.

Augusta Knitting Corp., Utica, N. Y., is building a pilot plant in Lumberton, N. C. If labor is available, the company plans to enlarge the operation and build a plant for full-scale operations.

Robert Bruce Knitwear Co., Inc., Philadelphia, Pa., has leased 38,000 sq. ft. of floor space on the corner of B St. & Lehigh Ave. Additional machinery will be installed as part of the company's general expansion. The swim trunk and knitted shirt operation of the company will be located here.

Catalina, Inc., Fullerton, Calif., has started operations in its new one-story building. The plant contains a total of 24,000 sq. ft. of floor space.

Lawrence Knitting Mills, Inc., Charlotte, N. C., has moved into its new 10,000-sq.-ft. building. New equipment includes two 36-feed Supreme Knitting Machine units.

Moretz Hosiery Mills, Inc., Newton, N. C., has changed its name to Grandview Hosiery Co.

SYNTHETICS MILLS

British Nylon Spinners (Australia) Pty. Ltd., Melbourne, Australia, is building a $9,000,000 nylon-spinning plant that will contain 215,000 sq. ft. of floor space.

Osage Mfg. Co., Bessemer City, N. C., recently completed the installation of Dodenhoff automatic blending equipment.

Rex Mills, Inc., Ranlo, N. C., has purchased Dodenhoff automatic blending equipment.

Supreme Novelty Yarn Co., Ozone Park, N. Y., has been established as a subsidiary of Supreme Knitting Machine Co. The company will produce novelty yarns. A. Fried is president of the new company.

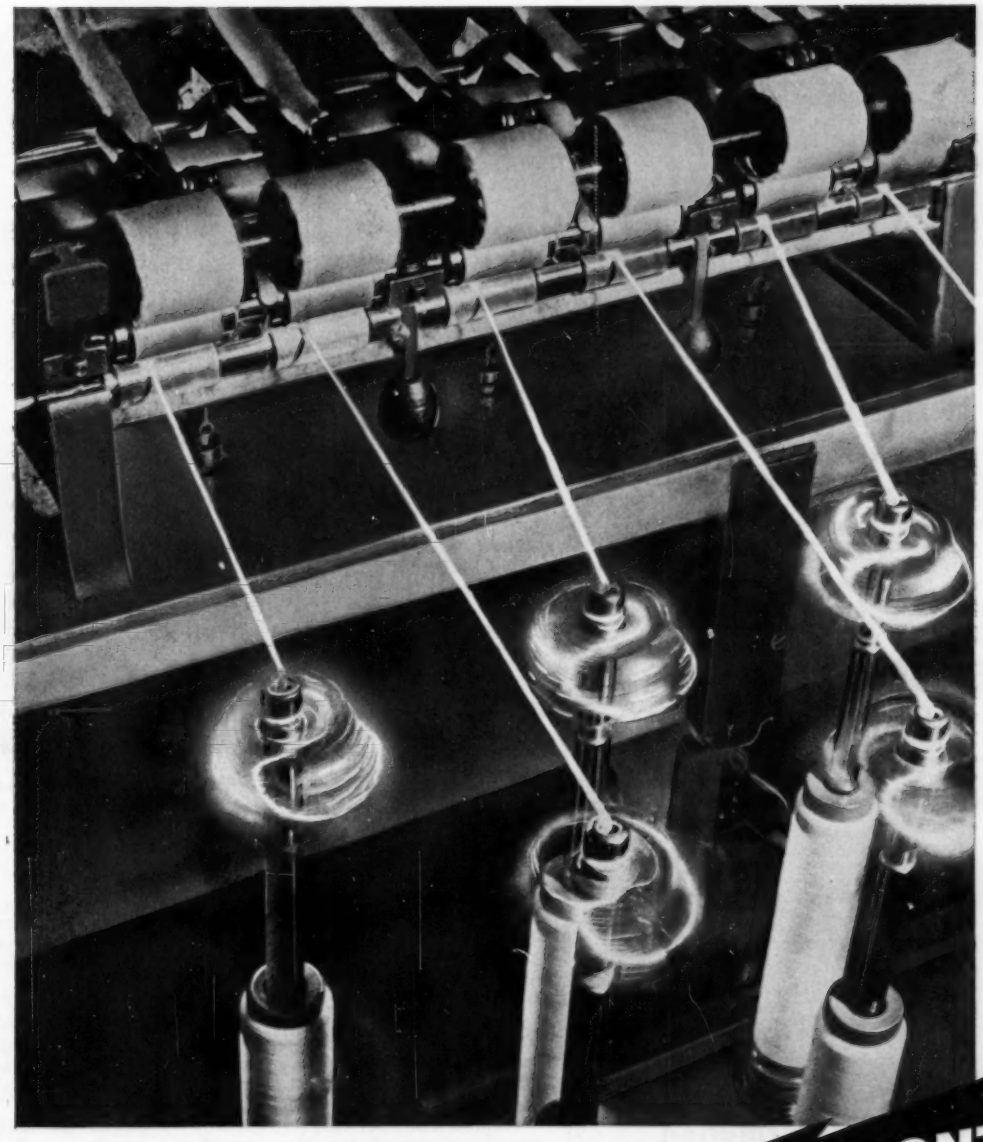
Paul Whitin Mfg. Co., Gilbertsville, Mass., has purchased 16 deliveries of Whitin Model M Even-draft drawing frames, two American System Quik-Set roving frames, and six American System Superflex spinning frames. The new equipment will be used for the expansion of production of synthetic-staple rayon.

DYEING AND FINISHING PLANTS

Burlington Industries, Greensboro Finishing Plant, Greensboro, N. C., is changing its operations over to commission finishing.

Lee Hosiery Finishers, Philadelphia, Pa., has leased the finishing plant belonging to Palmetto Full Fashion Hosiery Mill, Inc., Saluda, S. C. Lee will do custom work for Palmetto and other firms. Lou Finkle is in charge of operations.

North Carolina Finishing Co., Salisbury, N. C., has installed a waste-water heat-recovery system.



BORNE-STAT means "STATIC CONTROL" at Low Cost!

BORNE SCRYMSER Since 1874

Our Laboratory Facilities are always at your disposal

Today—mill after mill acclaims BORNE-STAT as a cost-cutting "anti-static" concentrate. For when 1%-2% BORNE-STAT is added to Textile Fibers both Natural and Synthetic—the uniform result is superior static control at low cost.

Get all the facts! *Learn how BORNE-STAT will help you cut costs and increase production. Write for full particulars now.*

BORNE CHEMICAL COMPANY, INC.
Formerly BORNE, SCRYMSER COMPANY
Elizabeth, N. J. · Charlotte, N. C.

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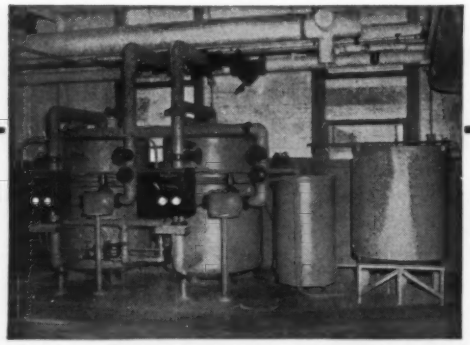

INVERSAND WATER SOFTENER PLANT

Producing

CLEAR-IRON FREE 100% SOFT WATER

Often For As Little As 1¢ per 1000 Gallons

Troubled with harshness, poor finish, uneven shades, redyes, seconds, and other product difficulties—?? The secret of uniformity may lie in your water supply. May we check it for you?

HUNGERFORD & TERRY, INC.

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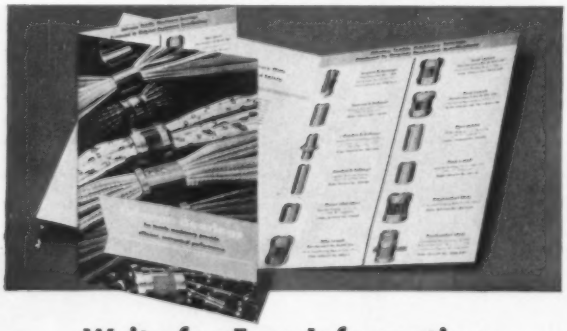

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The ordering of maintenance material for textile machinery is simplified with this new Johnson folder which illustrates and describes a wide range of bearings for several leading makes of textile equipment.

You can order in confidence for Johnson Bearings are made to the exact specifications of the original equipment. The design of each bearing, its alloy, size-tolerances and oil grooving all are identical with the bearing to be replaced.

For your free copy of this Johnson Textile Bearing Folder JBL-9, write Johnson Bronze Company, 364 S. Mill Street, New Castle, Pa.

Johnson Textile Bearings

NEWS about MEN

John G. Anderson has been named president and general manager of Circle-Bar Knitting Co., Kincardine, Ont.

William Argo has been named superintendent of Bantam Tricot Mills, Bantam, Conn.

Harry L. Beal has been named manager of the Mac Hosiery Mills, Granite Falls, N. C.

Edward G. Bilodeau has been named superintendent of dyeing, bleaching, and finishing at Bates Mfg. Co., Bates Div., Lewiston, Me.

Harold Bobo has been named a vice president of Burlington Tricot Co., Burlington, N. C.

N. J. Boivin has been named overseer of weaving at Hartford Woolen Co., Hartford, Vt.

John A. Boland, Jr., has been named a vice president of Burlington Tricot Co., Burlington, N. C.

John A. Bradshaw has been named manager of the Mechanical Development Dept., Linen Thread Co., Paterson, N. J.

Mrs. Martin H. Bradshaw has been named a vice president of Berryton Mills, Inc., Berryton, Ga.

Richard N. Bromley has been elected president of Quaker Lace Co., Philadelphia, Pa.

William Burke has been named superintendent of yarn dyeing at Clinton Dye Works, Clinton, Mass.

Ray E. Chandler has been elected vice president of Tryon Processing Co., Tryon, N. C.

WILLIAM HELLER has been elected president of Sidney Blumenthal & Co., Inc., New York, N. Y.

James R. Clark has been named superintendent of Woodside Mills, Greenville, S. C.

Ray Connell has been named overseer of finishing and boarding at Sandhurst Mills, Rockingham, N. C.

A. C. Copeland has been named superintendent of Dan River Mills, Inc., No. 2 Division, Danville, Va.

Durward W. Costner has been named vice president and general superintendent of Rock Hill Printing & Finishing Co., Rock Hill, S. C.

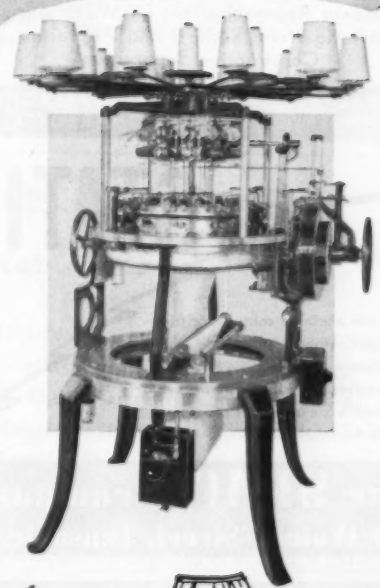
Joseph B. Cowett has been named president of Pioneer Valley Finishing Corp., Holyoke, Mass.

William B. Croxton has been named group manager at Burlington Mills Corp., Cramerton Div., Cramerton, N. C.

Jack Darlington has been named plant manager of Pine Tree Co., Dahlonega, Ga.

THE MARKET'S WIDE OPEN

for the Fabrics Produced on a WILDMAN REVOLVING FABRIC MACHINE



Textile men, aware of present demands of the apparel market, will recognize in these Wildman machines a source of immediate and lasting profit from both operating and merchandising standpoints.

"With the greatest of ease" it turns out top-quality fabric for sportswear, underwear, beach wear, outerwear, dress, nightwear, foundations, stockinet, plushes, fleeces etc. Available in many styles for jersey, rib, interlock, for plain, tuck, welt stitches with or without automatic changes. Many sizes as large as 36" with feeds to satisfy any customer's requirements. Write us today for complete information.

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WILDMAN

MAKES THE MACHINES THAT TEND TO THEIR OWN KNITTING

Manufacturers of: **FULL FASHIONED MACHINES; CIRCULAR MACHINES FOR OUTERWEAR, UNDERWEAR, SPORTSWEAR, TRIMMINGS; STOP MOTIONS**

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Novelty Yarns

Any construction to your specifications using any fiber for Men's Wear, Dress Goods, Upholstery, Draperies, Automotive, and so on. Twists, Boucles, Ratines, Knots, Nubs ——

Neva-Tarn Metallic Yarns

Non Tarnishing Metallics, all constructions of supported yarns including Mylar on disposable tubes or cones for Knitting and Weaving into all types of fabrics. Additionally - Metallics combined with Novelties.

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TEXTILE MILLS AND OTHER INDUSTRIAL PLANTS

Electrical, Steam, Diesel and Hydraulic Engineering
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You can eliminate costly static from warpers, slashers, cards, and other machinery. The SIMCO "Midget" guarantees to be the most effective, yet least expensive static eliminator! Write for information.

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Specializing in Textiles for over 40 Years

RALPH E. LOPER CO.

GREENVILLE, S. C. Dial 2-3868
FALL RIVER, MASS. Dial OSborne 6-8261

NEWS ABOUT MEN Continued

N. P. Edge has been named overseer of carding and spinning at West Cotton Mills, West, Texas.

Clarence E. Elsas has been named executive vice president of Fulton Bag & Cotton Mills, Atlanta, Ga.

Paul D. Emery has been named assistant to the vice president in charge of production at Fieldcrest Mills, Inc., Spray, N. C.

Carlisle W. Evans has been promoted to group manager of the Scottsboro, Ala., and Franklin, N. C., plants of Burlington Hosiery Co.

R. Power Fraser, Jr., has been named general production manager of American Felt Co., Glenville, Conn. Mr. Fraser will be located in Newburgh, N. Y., where he will continue as manager of the company's Newburgh mill.

R. C. Gourley has been named division superintendent of Alabama Mills Div., Dan River Mills, Inc., Danville, Va.

Walter R. Guthrie has been elected president and treasurer of Lehigh Spinning Co., Allentown, Pa.

William J. Hallinan has been named president and treasurer of Clinton Dye Works, Clinton, Mass.

A. B. Hammond has been elected president of Berryton Mills, Inc., Berryton, Ga.

R. L. Holbrook has been elected a vice president of Wiscassett Mills Co., Albemarle, N. C.

E. Johnson has been named overseer of dyeing at Neponset Woolen Mills, Canton, Mass.

T. C. Jolly, III, has been appointed plant manager of Drayton Mills, Spartanburg, S. C.

George A. Kralle has been elected executive vice president and secretary of Durham Hosiery Mills, Durham, N. C.

Gerard Lareau has been named manager of Fonda Glove Lining Co., Fonda, N. Y.

Harold Lyons has been named manager of Shawmut, Inc., Brockton, Mass.

G. L. McCartha has been elected vice president and general manager of Riegel Textile Corp., Glove Div., Greenville, Ala.

John M. McSwain has been promoted to superintendent of Eastman Cotton Mills, Eastman, Ga.

F. H. Orbison has been elected president of Appleton Woolen Mills, Appleton, Wis.

A. J. Patrick has been named assistant superintendent of dyeing, bleaching, and finishing at Bates Mfg. Co., Bates Div., Lewiston, Me.

Irvin L. Payne has been promoted to assistant general superintendent of Dan River Mills, Inc., Danville, Va.

FRED H. SNYDER (left) has been named assistant secretary of C. H. Masland & Sons, Carlisle, Pa. ROBERT E. MILLER (right) has been named a research chemist at Masland.

Now there's a better way to carry

textile fibers

to market

Here is a MICARTA® shipping bobbin developed especially to withstand the squeeze of tightly wound textile fibers. Currently in use by one of the world's largest textile producers for the shipment of textile fiber, this new bobbin is proving itself ideal in a punishing application. Its remarkably high resistance to compression, impact and moisture absorption is seeing it through a record-breaking number of round trips from plant to converter without damage to bobbin or fiber.

Let us show you how this amazing new MICARTA bobbin can perform for you. Write Westinghouse Electric Corporation, MICARTA Division, Hampton, South Carolina. J-06609

YOU CAN BE SURE... IF IT'S Westinghouse

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textile products

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and SPEED INDICATORS
for
MAXIMUM
PRODUCTION
IDEAL FOR MOTORS - SHAFTS - SPINDLES - LOOMS - TURBINES - FOR TEXTILE AND POWER PLANTS.
1% Accuracy for any range from 30 to 100,000 RPM or surface speed. Antimagnetic durable mechanism. Efficient repair service at moderate charges.
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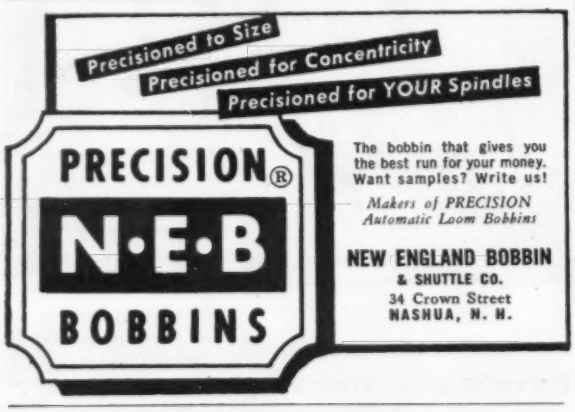
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Precisioned for Concentricity
Precisioned for YOUR Spindles
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BOBBINS
The bobbin that gives you the best run for your money. Want samples? Write us!
Makers of PRECISION Automatic Loom Bobbins
NEW ENGLAND BOBBIN & SHUTTLE CO.
34 Crown Street
NASHUA, N. H.

CALDWELL TANKS—
First Choice of the Textile Industry!
Caldwell offers the industry a complete tank service, including solid Stainless and Stainless-lined wood tanks and tubs, of any shape or size.
If you're thinking of installing or replacing a tank, let our 60 years' experience in building high-grade tanks serve you. Send for our catalog, today!
W. E. CALDWELL CO., Inc.
2060 Brook St., Louisville, Ky.
Caldwell
TANKS AND TOWERS

NEWS ABOUT MEN — Continued

R. C. Poole has been named superintendent of the Scottsboro, Ala., plant of Burlington Hosiery Co.

Julius M. Ramsay has been named division manager of half-hose manufacturing operations for Burlington Hosiery Co., Asheboro, N. C.

Phillip M. Russell has been named a vice president of Burlington Hosiery Co., New York, N. Y.

C. Shults, Sr., has been named industrial engineer at Virginia Woolen Co., Winchester, Va.

Edgar Smith has been named resident manager of Maine Spinning Co., Skowhegan, Me.

R. M. Stephens has been named to head the manufacturing operations of the new Alabama Mills Div., Dan River Mills, Inc., Danville, Va.

E. F. Strampe has been named manager of Island Woolen Co., Baraboo, Wis.

Richard H. Swallow has been named plant manager of the new carpet-yarn mill of Belton Yarn Mill, Belton, S. C.

Benjamin Thomas, Jr., has been named assistant manager of the synthetics-fabric plant of Fieldcrest Mills, Inc., Spray, N. C.

Gerald Thompson has been named overseer of spinning for Winona Textile Mills, Winona, Minn.

Edgar Towne has been named second-shift overseer of worsted spinning, twisting, and reeling for Sheble & Wood Yarn Co., Salamanca, N. Y.

RAYMOND E. KASSAR has been named president of Burlington Narrow Fabrics Co., New York, N. Y.

Stephen F. Tremmell has been named superintendent of top dyeing at Clinton Dye Works, Clinton, Mass.

Elbert Tripp has been named technical superintendent at Virginia Woolen Co., Winchester, Va.

Attilio Viti has resigned as overseer of carding at Wanskuk Co., Providence, R. I.

Charles Wheeler has been named an overseer in the worsted division of Chatham Mfg. Co., Elkin, N. C.

John Wolstenholme has been promoted to overseer of finishing at Vernon Textile Co., Philadelphia, Pa.

OBITUARY

John L. Bazan, retired foreman at Utica Knitting Co., Mill No. 1, Utica, N. Y.

James M. Bennett, 41, general superintendent of Rock Hill Printing & Finishing Co., Rock Hill, S. C.

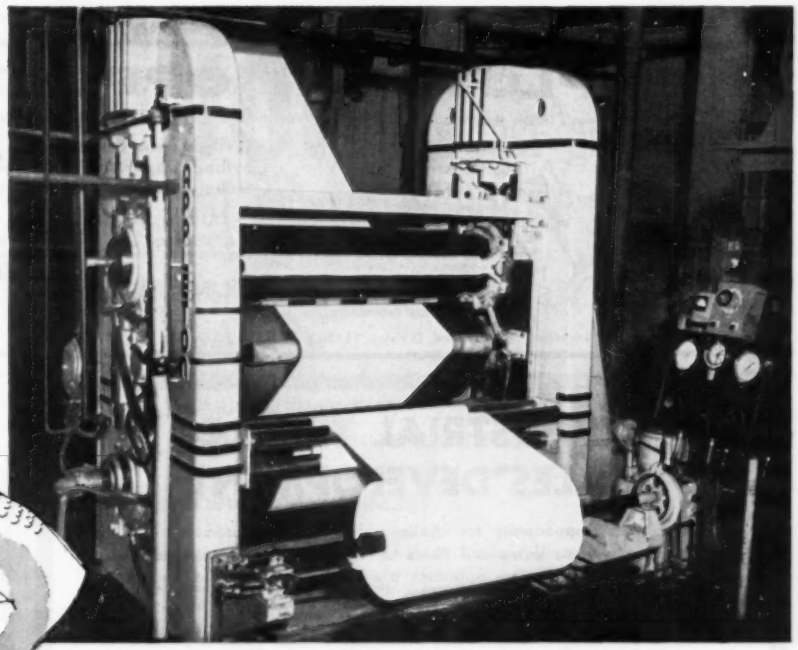
Elias D. Cohen, 74, vice president, director, and member of the executive committee of National Starch Products, Inc., New York, N. Y.

Jesse D. Long, 68, retired assistant treasurer of P. H. Hanes Knitting Co., Winston-Salem, N. C.

Frank J. Powell, 66, superintendent and general manager of Sauquoit Silk Co., Scranton, Pa.

S. H. Wheelock, 77, president and treasurer of the Stanley Woolen Co., Uxbridge, Mass.

Choose your Champion

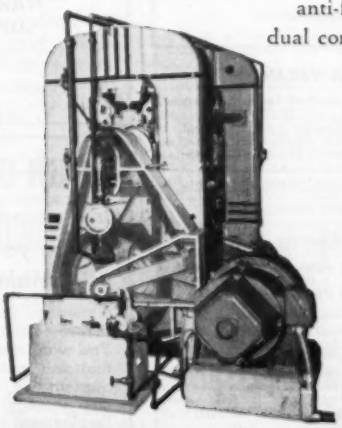


Here is an 80 Ton Appleton 3 Roll Calender in operation

...in Any weight division

The Appleton 3 Roll Hydraulic Friction Calender —available in 40 to 120 Ton models—takes difficult jobs in easy stride, performs dependably day after day, combines speed with consistent quality. Illustrated is the 80 Ton model. Its specialty— Everglaze Glazed finishes.

Long life features include all rolls mounted in anti-friction bearings with force feed oil lubrication . . . dual control pressure system . . . cooling cylinder . . . 40 h.p. Reliance V.S. drive.



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call our representative today and see how modern Appleton equipment can help cut your costs. There is no obligation.

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CUSTOM-BUILDERS OF TEXTILE CALENDERS • CALENDER ROLLS OF ALL KINDS

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The Advertisements in this section include all employment opportunities — executive, management, technical, selling, office, skilled, manual, etc.

Positions Vacant
Positions Wanted
Part Time Work

Civil Service Opportunities
Selling Opportunities Wanted
Selling Opportunities Offered

Employment Agencies
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The advertising rate is $17.00 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

An advertising inch is measured ⅞" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

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$1.50 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.
Position Wanted—½ the above rate.
Box Numbers—counts as 1 line.
Discount of 10% if full payment is made in advance for 4 consecutive insertions.
Not subject to Agency Commission.

Send NEW ADS or inquiries to Classified Division TEXTILE WORLD, P. O. Box 12, N. Y. 36, N. Y. for November issue closing October 17th

INDUSTRIAL TEXTILE SALES DEVELOPMENT

Outstanding opportunity for challenging position in promoting the uses of synthetic yarns and fibers in industry. A creative mind as well as an imaginative approach are the prime requisites for the position.

BS in Chemistry or Engineering preferred. 5 to 10 years experience in industrial fabrics or fibers either in sales, production or development. Location: New York City.

Write stating full experience, education, background, salary desired.

P-2986 Textile World
Class. Adv. Div. P.O. Box 12, New York 36, N. Y.

Superintendent Wanted

Worsted Knitting Yarn Mill, New England area. Man fully experienced with all operations, from Top to Finished Yarn. Position with unusual opportunity. Submit résumé; salary open.

Replies held confidential.

P-2866, Textile World
Classified Adv. Div., P. O. Box 12, New York 36, N. Y.

REPLIES (Box No.): Address to office nearest you c/o This publication Classified Adv. Div.
NEW YORK: P. O. Box 12 (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)
LOS ANGELES: 1125 W. 6th St. (17)

POSITIONS VACANT

Textile Chemist. We are a progressive and expanding company located in the United States with a Canadian Subsidiary. Our plans include the establishment of laboratory facilities in Montreal to serve the textile industry, primarily in the Province of Quebec, on a wide range of textile products. We require a graduate chemist with plant experience in printing and finishing, who is capable of handling technical problems, both in the laboratory and field on specialties for sizing, printing and finishing of cotton and synthetic fibres. Some development work may be required. Give details of education, experience and salary requirements. P-2418, Textile World.

Wanted boss carder and spinner for midwest 3 set Woolen Mill, second shift. Would consider second hand for position, steady work, state salary expected and experience. P-2962, Textile World.

POSITIONS VACANT

Mill Superintendent required for Latin American Spinning and Weaving Mill working spun rayon blends and filament yarns. Must be fully experienced in all phases of manufacturing, costing, quality control and organization.—Replies strictly confidential. Give full particulars as to age, experience, marital status, education, present income. Include phone number. P-2926, Textile World.

SELLING OPPORTUNITIES OFFERED

Sales Representatives, adhesives and finishes. Liberal commission. Adhesive Div. Globe Paint Co., 181 North 11th St., Brooklyn 11, N. Y.

Manufacturers representative (5). Active. Promote and sell imported densified Pickersticks, Shuttles, also Rawhide Pickers to Southern mills commission basis. Person(s) now selling other non-competitive weaveroom items with loom experience prfrd. Send resume. Replies confidential. RW-3005, Textile World.

Textile Salesman: Young man 20 to 35 years to sell Institutional and special woolens traveling mid-west territory. Excellent opportunity in small growing firm. R. C. Schneider Co., P. O. Box 3, Cincinnati 11, Ohio.

CONFIDENTIAL
EMPLOYMENT SERVICE
For textile mills seeking new personnel and mill executives seeking new positions.
WE INVITE YOUR INQUIRIES
CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St., Boston 8, Mass.
Telephone Liberty 2-6547
Over 55 Years In Business

POSITIONS WANTED

Excellent Salesman, Textile Engineer graduate, 20 years experience in woolen-worsted fabrics, knitting yarn production, initiating systems of manufacture, administration, cost calculation, wishes to locate with American woolen manufacturing. Excellent references. Speak 5 languages. PW-2710, Textile World.

Young Textile Executive Desires change. Textile Engineering graduate with ten years of multi-plant experience in woolens and synthetics. Assistant Superintendent's position in progressive woolen mill preferred, but will consider any challenging offer. PW-3004, Textile World.

Progressive middle aged Textile man desires responsible position and chance for investment with medium size Weaving Plant. Relocate. PW-2977, Textile World.

Textile Engineer: Intensive cotton, synthetic, and deep pile manufacturing background. Product development, methods improvement, production and quality control. Excellent mill experience as consulting engineer with leading textile consulting firm. Excellent references. PW-3028, Textile World.

Engineering Graduate—10 years experience Product Development. (Industrial and other fabrics), sales-service, synthetic fibers, production—moderate 5 figure salary. PW-3058, Textile World.

Textile Engineer graduate, 20 years experience in woolen-worsted fabrics, knitting yarn production, initiating systems of manufacture, administration, cost calculation, wishes to locate with American woolen manufacturer. Excellent references. Speak 5 languages. PW-3088, Textile World.

NARROW FARBRIC SUPERINTENDENT

Over twenty years experience in elastic and non-elastic. Desires change. Foreign or South acceptable.

PW-2951, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

YOUR ORGANIZATION

Is it complete?
Are you expanding it?
Making Replacements?

Naturally, you are anxious to secure the most suitable man or men available. You want men with the special training that will make them an asset to your organization. You can contact such men through an advertisement in this Employment Opportunities Section of TEXTILE WORLD.

TEXTILE WORLD
Box 12 **New York 36, N. Y.**

Textile Finisher

wanted by New England Firm to manage operations of a production dept. Experienced with piled fabrics helpful but not essential.

Excellent opportunity for energetic person—well qualified to assume supervisory responsibility.

Write full details concerning background, work experience and salary expectations to

Box 1247, 1474 B'way, N.Y.C.

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Opportunities for

CHEMISTS
PHYSICISTS
CHEMICAL ENGINEERS
MECHANICAL ENGINEERS & DESIGN ENGINEERS
TEXTILE ENGINEERS
PRODUCTION ENGINEERS

Rapid growth of synthetic fiber development creates unlimited opportunities for technical men who want to be on the forefront of this exciting field. Openings now in fiber process development, mechanical development, product development, and production.

Men with 0-15 years experience in their profession will be considered.

Interviews arranged promptly. Send resume to:

Textile Fibers Department
Carbide and Carbon Chemicals Company
P. O. Box "N"
South Charleston, West Virginia
Attention: W. H. Billings, Jr.

New York Personnel Dept. T.
Carbide and Carbon Chemicals Company
30 East 42nd Street
New York 17, New York
Attention: Mr. E. R. Brown

SEE CHEMSTRAND'S AD ON PAGE 153 OF THIS MAGAZINE

Positions available for

ENGINEERS

(Chemical, Mechanical, Metallurgical, Textile, Industrial, Instrument and Civil) and

CHEMISTS

(Organic, Physical, Analytical—Instrumental and Wet Method, Textile Chemists.)

Write to Technical Personnel Department

THE CHEMSTRAND CORPORATION
Decatur, Alabama

POSSESSING

Textile company possessing a large site in the center of Paris and an important clientelle in France and the French Union * Excellent bank and commercial references * Is looking for Distributor or General Agent for France. Write to

O R E T ,
29 Rue due Caire, Paris 2.

EXCELLENT OPPORTUNITY
For Right Persons To Fill Vacancies In Large Ontario Textile Mill
Assistant Superintendent For Cloth Handling and Finishing
Overseers and Foremen For Spinning, Weaving and Finishing Departments
Excellent Hospitalization, Insurance and Pension Plans.
P-2995, Textile World
Class. Adv. Div., P.O. Box 12, New York 36, N. Y.

Assistant to Mill Manager

Special experience required in weaving production and quality control. Spinning and weaving mill upstate New York.

BERNHARD ALTMANN
% P-3063, Textile World
Classified Adv. Div.,
P. O. Box 12, New York 36, N. Y.

SEARCHLIGHT SECTION

(Classified Advertising)

BUSINESS OPPORTUNITIES — EQUIPMENT - USED or RESALE

UNDISPLAYED —**RATES**— ***DISPLAYED***

$1.50 a line, minimum 3 lines. To figure advance payment count 5 average words a line.

BOX NUMBERS count as one line additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals.

The advertising rate is $14.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.
AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page.
EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

Send NEW ADS to Classified Adv. Div., Textile World, P.O. Box 12, N. Y. 36. Nov. issue closes Oct. 17.

EMPLOYMENT PROBLEM?

When you are in need of specialized men for specialized jobs, contact them through an employment ad in this publication.

TEXTILE WORLD
P. O. Box 12
New York 36, N. Y.

"SPECIALIST IN THE DISMANTLING, MOVING AND ERECTING OF TEXTILE MACHINERY"

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MANUFACTURERS OF
CARD PLATES - MOTE KNIVES - PICKER BEATERS - ALL TYPES OF FLUTED ROLLS
C. C. Boyd, Gen. Mgr. — Phone University 5-8607 — 1212 Baker Blvd. Gastonia, N. C.

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PREPARATORY

5M—New GIANT PACKAGE MULE BOBBINS 14", tan fibre, A.P.T. Co.
20—Schlumberger Wool COMBS, segment width 310 M.M.
1—P&S 60" Single Cylinder STAPLE CARD, double doffers, metallic wire.
1—D&F 48" x 60" dia. 3 Cyl. Iron WOOLEN CARD, Feed, Peralta, Tape Condenser.
18—CAN COILERS taking Can 12" x 36".
2—P&S Single Drum CEILING TYPE STOCK CONDENSERS.
4—Sargent & P&S PIT FEEDS, 48", 78", Reeves and Motors.
1—Harwood 72" large capacity FEED, type 563, Variable Drive.
3—B.S. Roy, D&F, 48", 60" CARD GRINDERS.
3—D&F STAPLE OPENERS, B.B. Pinned Clyinders, 42" dia. x 21½" face.
1—G&Y SPOOL STRIPPER, 56" Spools, B.B., motor drive.
1—C&M 40" FEARNAUGHT PICKER, Metallic Feed Apron.
1—D&F 48" B.B. 12 Bar PICKER, Feed Apron.
1—Schofield 42" WASTE PICKER, 1949, Ball Bearing Cylinder.
1—Whitin Schweiter WINDER, 3 Spindle 8-¾ to 10-⅛" Bobbin.

FINISHING

1—P&W 68", 4 Rool, BRUSH & SANDING Machine with Folder.
2—Simpson BATCHERS 50" and 80" width.
1—Van Vlaan. 60" BUTTON BREAKER, 19 Rolls, tension leton, batcher takeup.
1—P&W DESPECKING Machine 89", w/Scray, folder, exhaust fan, motor.
1—P&W SEMI-DECATOR, Cyl. 72" x 60" dia., 1949, guiders, pump, motors.
1—Gessner SEMI-DECATOR, Cyl. 75" x 36" dia., Motor, Vac. Pump, controls.
1—P&W MEASURING, DOUB. & WINDING Machine, 68", with motor.
1—R&L S.S. PIECE DYE KETTLE 70", enclosed, 12 string, deep tub.
1—Gessner NAPPER 72", D.A., 20 Gear Driven Rolls, with folder.
3—Gessner NAPPERS, S.A., 72", 80", 14 Roll, w/Folder, motor.
1—P&W D.A. NAPPER, 80", 24 Rolls, B.B., Folder, Motor.
1—P&W Model A 66" Double Blade SHEAR w/Ceiling Folder.
3—C&M Single and Double SHEARS, 40-76", Flat Blades.
2—Kettling & Braun and Jahr Double SHEARS, 47", 79", flat blades.
1—Birch 78" SCUTCHER w/Vacuum Extractor, Collector, Folder.

McDOWELL ASSOCIATES INC.

General Offices 41-E. 42 Street
New York City 17, N. Y.
Phone: Murray Hill 2-7417

Warehouse No. 1 N. Front
Dock & Water Sts., Hudson, N. Y.
Phone: Hudson 8-3211

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For the Finest in Rebuilts

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93 CFM 100 psi 7x6 Ingersoll-Chicago-Worthington
137 CFM 100 psi 7x7 Ingersoll ES1
160 CFM 60 psi 8x7 Ingersoll ES1
173 CFM 100 psi 9x8 American-Ingersoll-Chicago
229 CFM (actual) 100 psi C-50-50H Fuller
234 CFM 100 psi 9x9 Chicago T
234 CFM 100 psi 9x9x9 Chicago (St.) New
254 CFM 115 psi 10x10 Ingersoll ER1
283 CFM 35 psi 10x7 Ingersoll ES1
290 CFM 75 psi 10x9 Ingersoll ES1
354 CFM Vacuum 14x5 Ingersoll
360 CFM Vacuum 14x8 Oliver
364 CFM Vacuum 14x6 Ingersoll
368 CFM 100 psi 12x10 Ingersoll ER1
434 CFM Vacuum 14x7 Worthington HB
464 CFM 100 psi 12x11 Ing. ES1
686 CFM 100 psi 14x13 Ing. ES1
730 CFM 50 psi 15x11 Ing. ES1
1717 CFM 20 psi 23x13 Ing. ES1

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WHITIN SCHWEITER AUTO. WINDERS

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1—5-Can Johnson Slasher, S.S.—Like New
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4—B/C LS Tying Machines—1—1948
1—B/C LC Tying Machine—Excellent
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1—Van Vlaanderen Tuber

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8,000—Rubberized Fabric Lug Straps—New
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24,000—NC727, G758 Armstrong Spinning Cots—New
3,000,000—Stainless Steel 14" Heddles
10,000—Heddle Frames & Heddles, 10", 12", 13"

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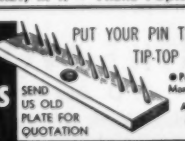

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18—Lowell 40" Cards, 28" doffer.
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11—Werner S.S. Dye Jiggs, 70", 1954.
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24—Spdls. Hacoba Filling Winders, 1954.

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1 P&W Model B Shear
1 2 Ton Electric Hoist
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1952. Burlington Engineering Company. Stainless steel enclosed type.

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Belt driven. Complete with motorization and auxiliary equipment.

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1—70" Measuregraph Tuber
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NOTE: This machinery has never been offered for sale until this offering—due to a change in plans the machinery has become available for immediate sale.

6—WHITIN MODEL G4—3 Cylinder Sets 60 x 60 All Iron Woolen Cards, Year 1941, Cards have full complement of Workers and strippers, Model H. Whitin Feed Box, Duesberg 60" Peraltas, Model F. Whitin Intermediate Broadband Feeds. Cards are equipped with Whitin Single Rub Tape Condensers taking off 96 Good Ends. Two of the Tapes are Year 1944 Model K4A and the Balance are 1941 Model K4B. Cards are individually motor driven by Gearhead Motors, 5 HP Motors on Breakers and 10 HP on 2nd Breaker and Finisher. Workers are chain driven and Cylinders are all ball bearing. Cards are fully clothed and clothing is in good condition. Waste-end blower is included.

1—HARTMANN 3 CYLINDER WOOLEN CARD, Cylinders are 72" wide x 48" Diameter. Card is equipped with regular feed box, Whitin Model F-1 Intermediate Broadband Feed, Duesberg 73" Wide Peralta, Whitin Model K4B Year 1950, 72" Tape Condenser Taking off 160 Good ends. Workers are chain driven and cylinders are ball bearing. Card is fully clothed and individually driven thru Gearhead motors. Waste-end blower is included. Clothing is in excellent condition.

14—WHITIN MODEL E, YEAR 1941, 120 SPINDLE, Woolen Spinning Frames. Ring is 5"—Gauge is 6½". Frames have Clutch type spindles. Frames are direct driven thru 15 HP Motors. All frames have double line front rolls, and are in excellent condition.

1—WHITIN MODEL E, YEAR 1944, 120 SPINDLE WOOLEN SPINNING FRAME. 5" Ring—6½" Gauge. Frames have clutch type spindles and direct driven thru 15 HP Motors. Frames have double line front rolls and are in excellent condition.

1—ABINGTON VACUUM STRIPPING SYSTEM YEAR 1949, consisting of Motions, etc., for 7 Cards, also Ingersoll-Rand-Type ES-1 Vacuum Pump 26 x 11, with 75 HP Motor, 3 Abington Tanks and all piping from Tanks to and over cards. This system will accommodate 20 sets of cards.

2—WHITIN MODEL F-FULL NOVELTY TWISTERS, 224 Spindles per Machine. 3¾" Gauge, 2¾" Ring—4 Step Pin Creel, 8" Traverse. Motor Driven with Reeves Variable Drive.

2—FOSTER MODEL 102 CONE WINDERS, 120 Spindles, complete with Slub Catchers, Disc Tensions. Takes Paper Cone 9°36'. Each machine equipped with 2 Bobbin Conveyors and 2 motors per each machine. Serial Nos. are 1709K and 1710 K on the above 2 Machines.

1—FOSTER MODEL 25 DOUBLER, 120 Spindles Per Machine. Machine is motor driven, 6" Traverse for Wood Tubes.

1—FOSTER MODEL 12 DOUBLER, 120 Spindles, 6" Traverse, for Wood tubes, Machine is motor driven.

1—DAVIS & FURBER MIXING PICKER YEAR 1942, 6 BAR, Complete with Model N Sargent 48" Feeder, Blower and Oiling system.

1—DAVIS & FURBER MIXING PICKER YEAR 1935, 6 BAR, Complete with Sargent 54" Feeder, Oiling device, tanks and Blower.

1—SCHOFIELD WASTE DUSTER—40" Feed Table, Motor Driven Late Model.

1—Stokes Fiber Cutter, Motor Driven.

1—H. & W. YARN CONDITIONER YEAR 1950, Type ST-3, Serial FO-1162. 78" Wide x 78" Deep x 54" High. Complete with Motor driven Fan, Bristol Temperature Control and Timer. Sides and Door are Stainless Steel Lined.

3—Floor Type Card Grinders 72" and 60" Motor Driven.

1—FAIRBANKS DIAL PLATFORM SCALE SERIAL F-306-448, 500 lbs. on Dial by ½ pound graduations and 500 lbs. on Beam.

1—TOLEDO PLATFORM DIAL SCALE, 800 lbs. on Dial, 800 lbs. on Beam. Model 31, Floor type.

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8—**Whitin Model BJ Twisters, Year 1942**—4" gauge, 3" ring, with Knee Brakes and Stop Motion, M.D.

6—**Warp Compressor Co., 40" Hi-Speed Spoolers**—40" Traverse, 40 Ends. Magazine Creels. Year 1944.

40—**Woolen Crompton & Knowles W-3 Automatic Convertible 82" Looms.** Friction Let-off, Worm Take-up, EWSM, with 1½ H.P. Motors. Shuttle size: 18" Long, 2⅛" Wide, 1 11/16" High.

24—**Woolen Crompton & Knowles W-3 Automatic 4 x 1, Non-Convertible 82" Looms.** Friction Let-off, Worm Take-up, EWSM, with 1½ H.P. Motors. Shuttle size: 18" Long, 2⅛" Wide, 1 11/16" High.

1—**Foster 102 Coner, 100 Spindle.** Serial No. 567. Arranged for Wood Tubes.

8—**D&F 92" Pinless Dressing Reels,** complete with Beamers, Hackstands and Spool Creels.

3—**Proctor & Schwartz Tray Dryers for Packages,** 1200 pounds capacity.

4—**James Hunter 100" Cloth Washers, Year 1945.** Model GK. Rubber Rolls, Belt Driven.

2—**Riggs & Lombard 6-Ft. Stainless Dyekettles, Year 1946.** Kettles have Knurled Hump Reels and are direct MD. Tag temperature controls included.

1—**David Gessner Full Decator, Year 1945.** Complete with Foxboro Electronic Timer and Temperature Controls.

1—**David Gessner Full Decator, Boiler on this Machine New in 1950.**

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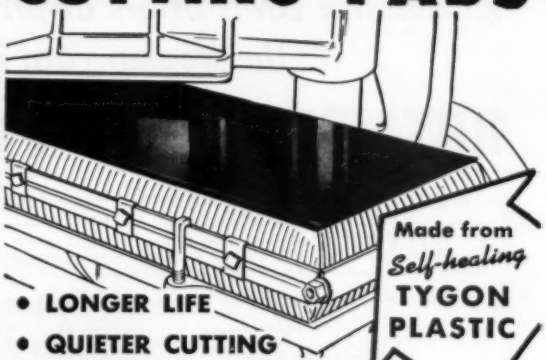

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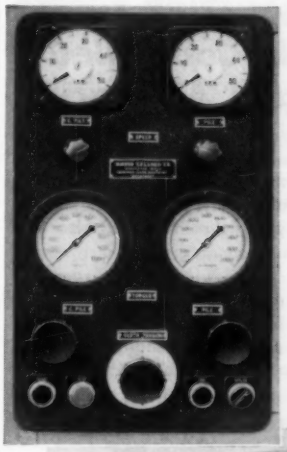

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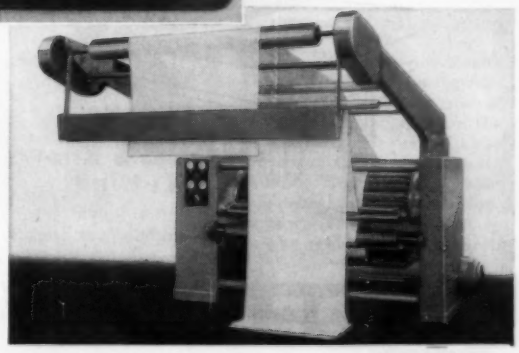

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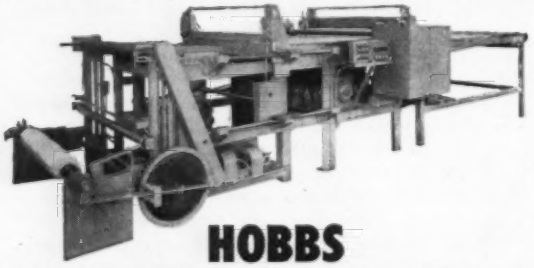

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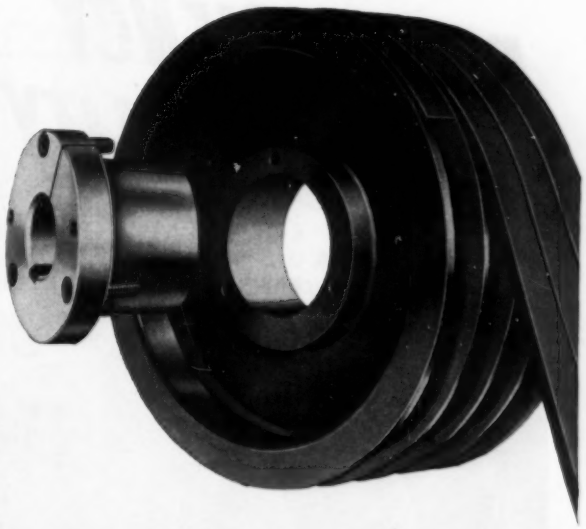

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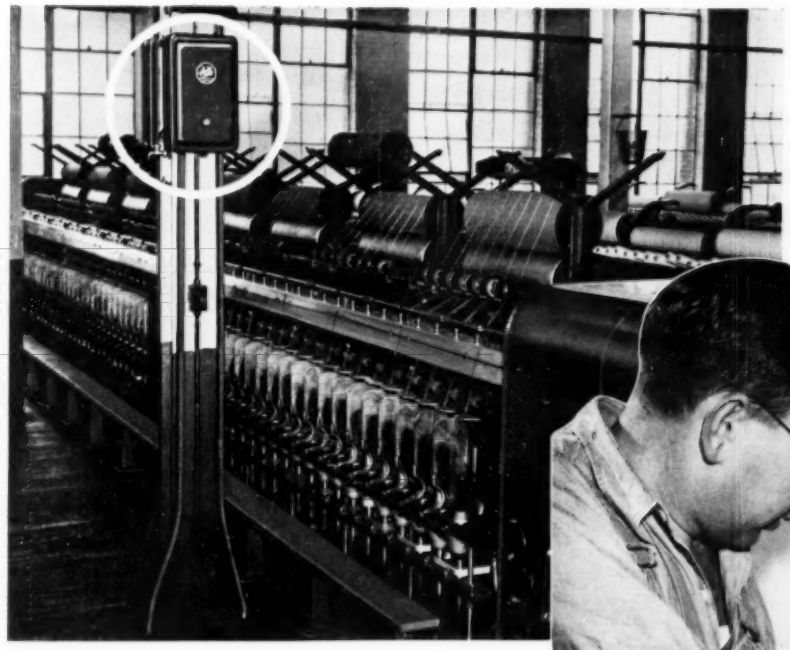

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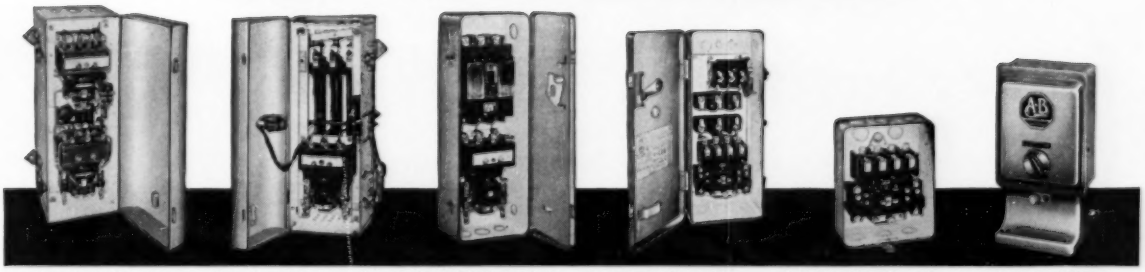

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